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Drawing book 11 - TRUSS Details

Include work order no. and floor no. if applicable

Roll # DB02	**Doc. ID (report #, dwg. #):**	
Document Date: 1967-69	**Document Author Name:**	**Author Organization:** SHCR

KEYWORDS – HIGHLIGHT ALL THAT APPLY

Level 1

Bankers Trust	Project 4	WTC 1 - North Tower	Add
Below Grade	Project 5	WTC 2 - South Tower	
Concourse	Project 6	WTC 3 - Marriot Hotel	
Electrical Substation	Project 7	WTC 4 - South Plaza Bldg.	
Liberty Plaza	Project 8	WTC 5 - North Plaza Bldg	
PATH Station	WFC 1 - Oppenhiemer Dow	WTC 6 - Customs House	
PATH Terminal	WFC 2 - Tower B	WTC 7	
Project 1	WFC 3 - American Express	WTC Complex	
Project 2	WFC 4 - Tower D	WTC Plaza	
Project 3			

Level 2

Accident analysis & risk	Fire protection	Misc. Performance Problems	Structural
Architectural	Fire service	News coverage	Tenant alterations
Data request	Landscaping	Police	Tenant Space
Emergency management	Management	Security	Add
Evacuation	Mech./elec.		

Level 3

1993 explosion	Cranes	Frame	Roof	Weight
A/E fitout	Criteria	Frame analysis	Safety	Weld detail
A-242	Dampers	Frequency	Schedule	Weld size
A-36	Debris	Fuel	Sculpture	Welding
A-497	Deck	Furniture layout	Security system	Wind
Aircraft impact	Deflection	Generators	Shear knuckle	Windows
Air cooled condensers	Demolition	Guidelines	Shear test	Yield strength
Analysis	Design	Gypsum board	Shear Stud	Add
Angles	Detailing	Hat truss	Shop drawings	
Antenna	Doors	Human comfort	Shortening	drawing
Artifacts	Drawings	HVAC	Slab	books
Asbestos	Eastern States Steel	Index	Slurry wall	
Base plate	Egress	Inspection	Smoke control	
Beams	Elevator	Insulation	Smoke test	
Bid documents	Elevator Shaft	Job number	Spandrel beam	
Bid Invitation	Emergency communications	Joist	Specifications	
Bow tie	Equipment	L-50	Splices	
Bracing	Erection marks	Lighting	Sprinkler	
Bridging truss	Errors & Omissions	Loads	Stability	
Building code	Escalator	Maintenance	Stairways	
Calculations	Expansion joint	Marking	Standards	
Carpet	Exterior columns	Mesh reinforcement	Steel	
Ceilings	Fabrication	Mill inspection	Steel composition	
Certification	Family member	Model	Stiffness	
Chillers	Field survey	Mullion	Structural review	
Cladding	Fire alarms	Operations	Surveillance	
Collapse	Fireproofing	Paint	Survey	
Columns	Fire spread	Partition layout	Survivor	
Communication systems	Fire testing	Partitions	Tenant list	
Composite truss	Firetower	Photos	Tenant occupancy	
Computer output	Flag Pole	Pipes	Testing	
Computer program	Flammability	Plumbing	Tie	
Concrete	Floor	Prestressing	Tolerances	
Connections	Floor load	Probability, uncertainty	Transfer Girders	
Construction	Floor slab	Quality control	Tried	
Contract	Floor system	Ramp	Truss	
Core beams	Floor trusses	Reinforcing (strengthening)	Vestibule	
Core columns	Formwork	Renovation	Vibration	
Corrosion	Foundations	Repair	Walls	
Cracking	Fracture	Research & Development	Water supply	
			Weather	

WTCI-1041-LERA

BOOK 11

TRUSS

DETAILS

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

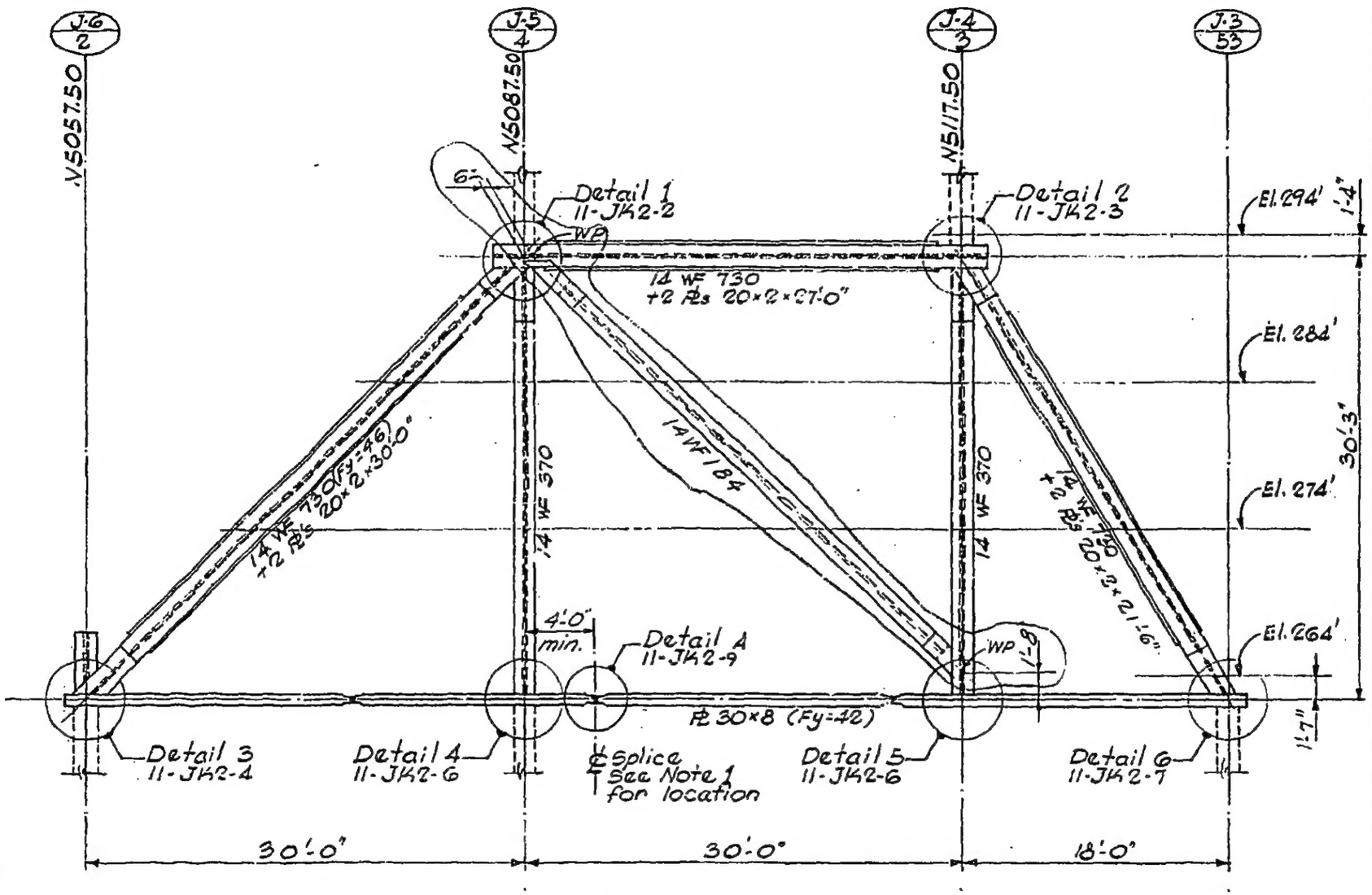
PROJECT THE WORLD TRADE CENTER | TITLE TRUSS ELEVATION | DATE 5-15-67

REVISIONS

4-5-68

4-26-68

4-18-69



TRUSS JT-1

1/8" = 1'-0"

(at W10290.00)

Notes:

1. Number and location of splices at Contractors option.
2. For intermediate support of bottom chord see Det. B, 11-JK2-9.
3. All steel shall have a minimum yield stress of 36 ksi, except as noted.

LICENSED PROFESSIONAL ENGINEER LESLIE E. ROBERTSON No. 24360 UNIVERSITY OF THE STATE OF NEW YORK

DRAWN A.F.

REVIEWED E.L.

11-J1-2

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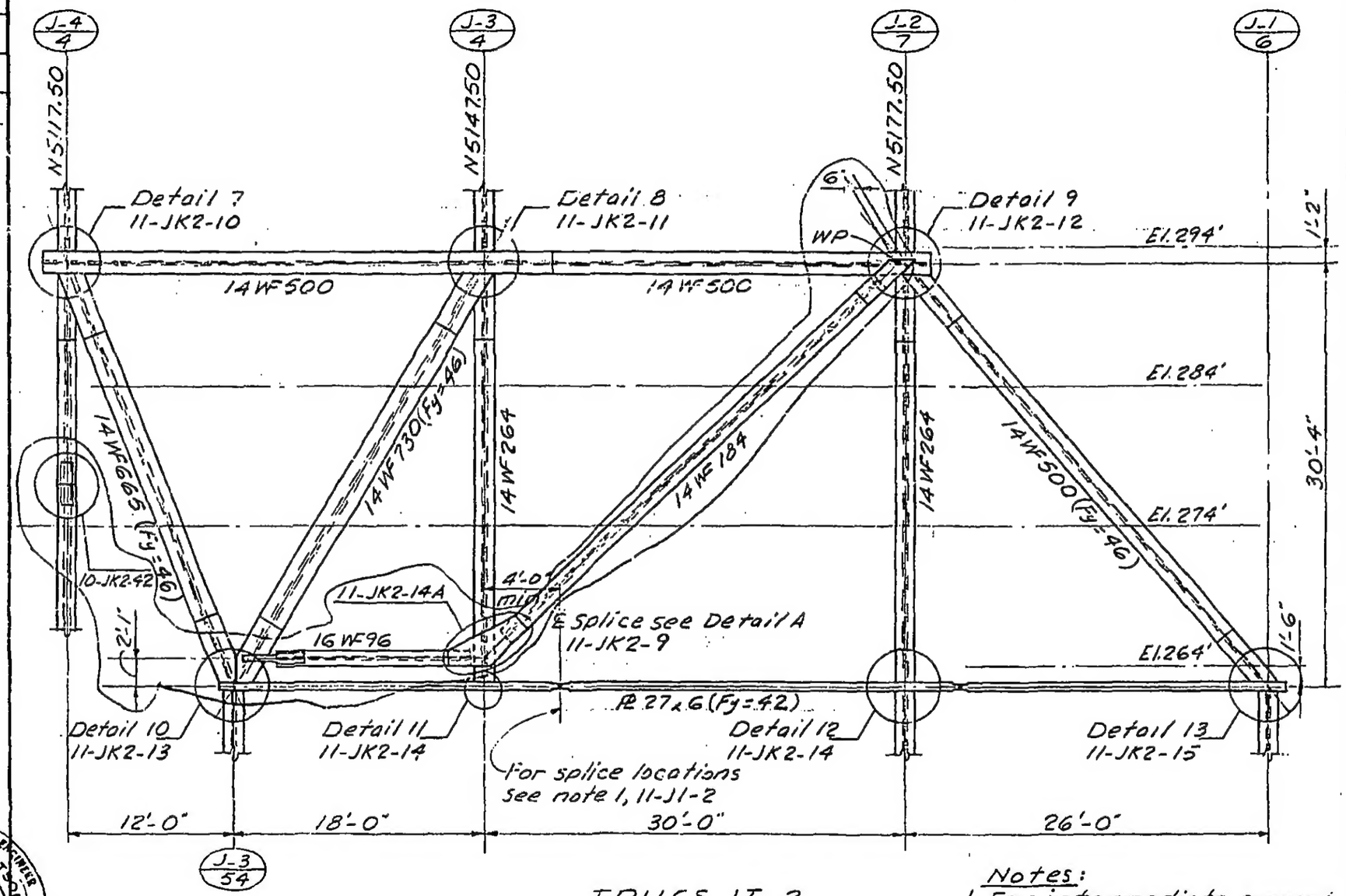
PROJECT THE WORLD TRADE CENTER | TITLE TRUSS ELEVATION | DATE 5-15-67

REVISIONS
4-5-68
4-26-68
4-18-69



TRUSS JT-2
3/8"=1'-0"

(or W10260.00)

Notes:
1. For intermediate support of bottom chord see Detail B, 11-JK2-9.
2. All steel shall have a minimum yield stress of 36 ksi, except as noted.

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DRAWN A.F.
REVIEWED EL.

11-J1-3

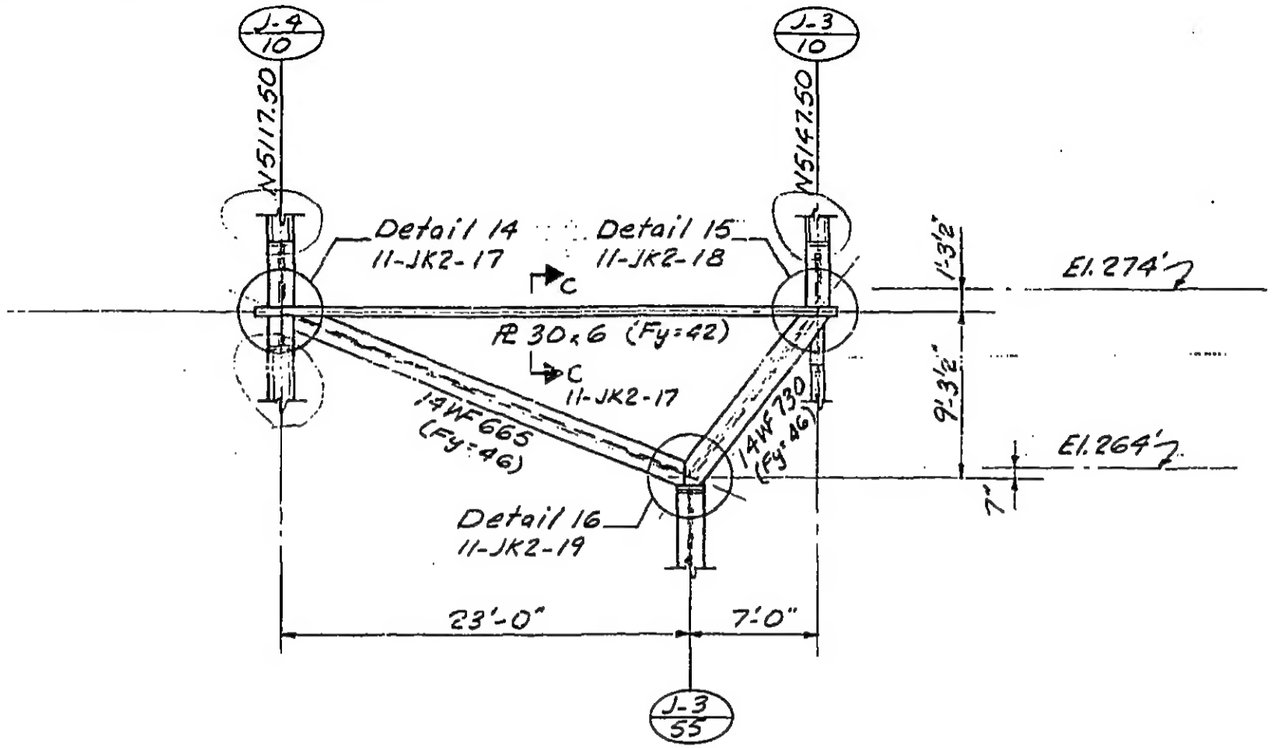
SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS ELEVATION | DATE 5-15-67

REVISIONS

4-5-68

4-26-68



TRUSS JT-3

1/8" = 1'-0"

(at W10080.00)

Note:

All steel shall have a minimum yield stress of 36 ksi, except as noted.

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11-J1-4

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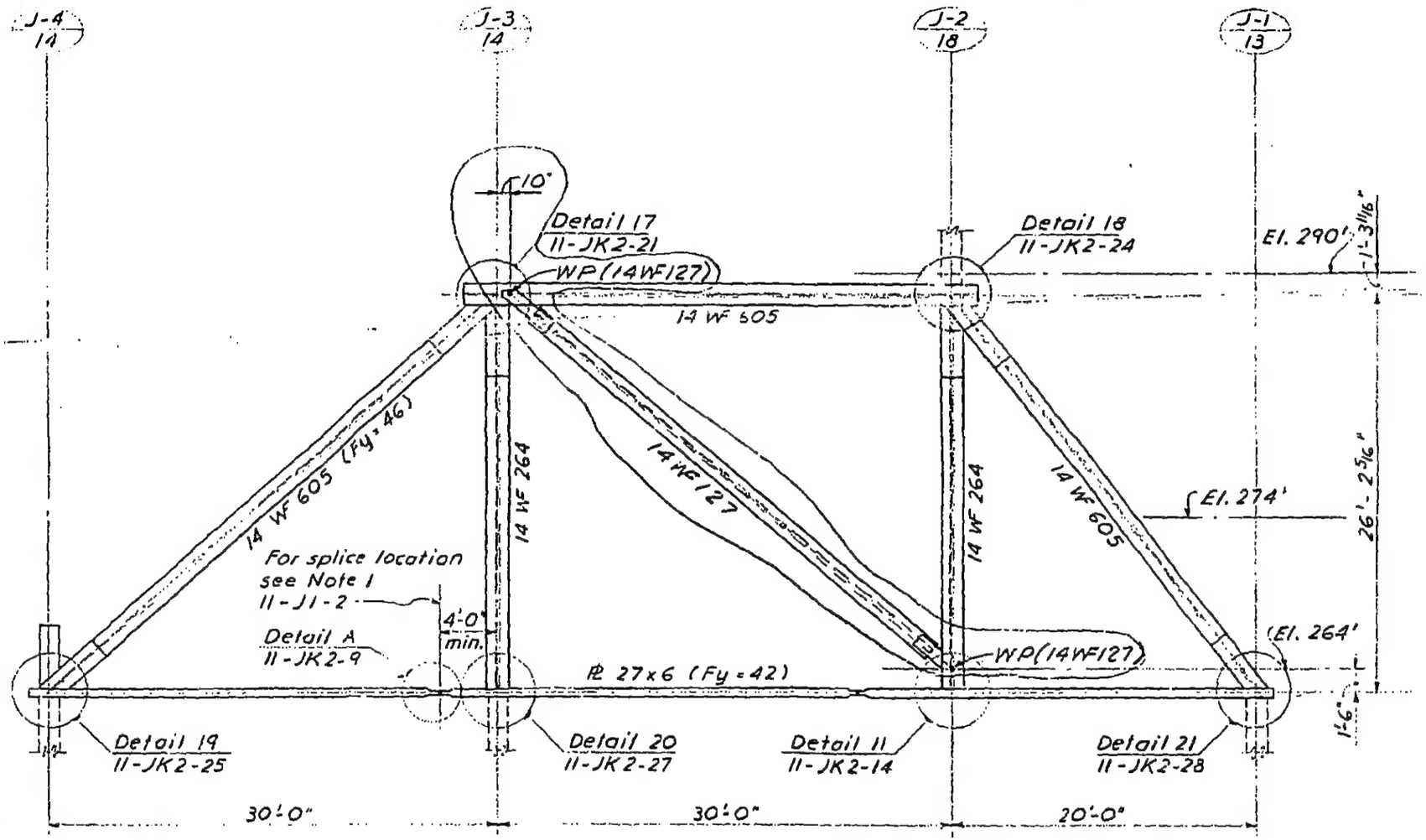
PROJECT THE WORLD TRADE CENTER | TITLE TRUSS ELEVATION | DATE 5-15-67

REVISIONS

5-1-68

4-18-69



TRUSS JT-4

1/8" - 1'-0"

(at W 9974.50)

Notes:

1. For intermediate support of bottom chord see Detail B, 11-JK2-9.
2. All steel shall have a minimum yield stress of 36 ksi, except as noted.

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A.F.

REVIEWED
E.L.

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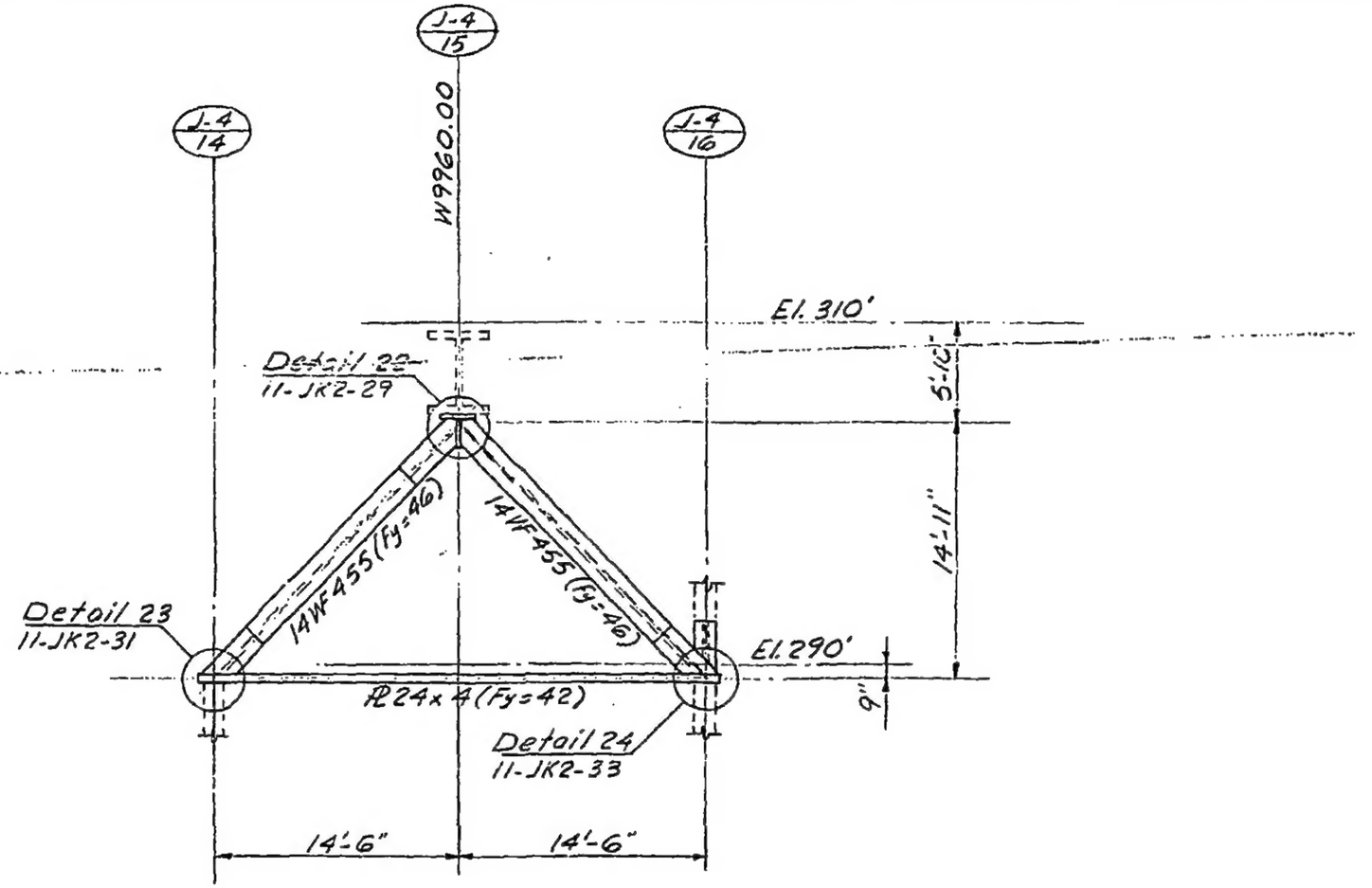
PROJECT THE WORLD TRADE CENTER | TITLE TRUSS ELEVATION | DATE 5-15-67

REVISIONS

5-1-68



TRUSS JT-5

1/8" = 1'-0"

(at N5117.50)

Note:

1. All steel shall have a minimum yield stress of 36Ksi, except as noted.
2. For tie-bar (bottom chord) material see note on Detail A, 11-JK2-9

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11-J1-6

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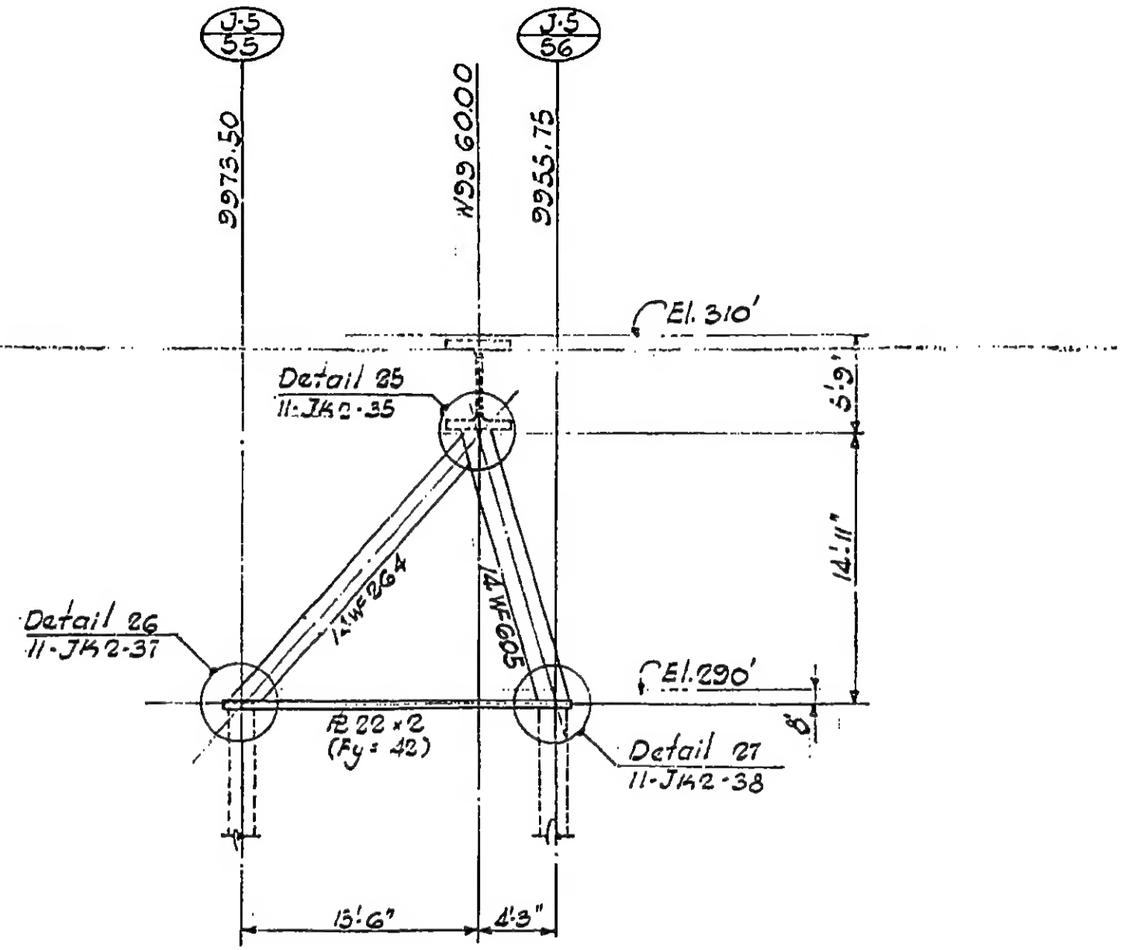
PROJECT THE WORLD TRADE CENTER | TITLE TRUSS ELEVATION | DATE 5-15-67

REVISIONS

5-1-68



TRUSS JT-6

1/8" = 1'-0"

(at N5072.50)

Note:

1. All steel shall have a minimum yield stress of 36 K.S.I., except as noted.
2. For tie-bar (bottom chord) material, see note on Detail A, 11-JK2-3.

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11-J1-7

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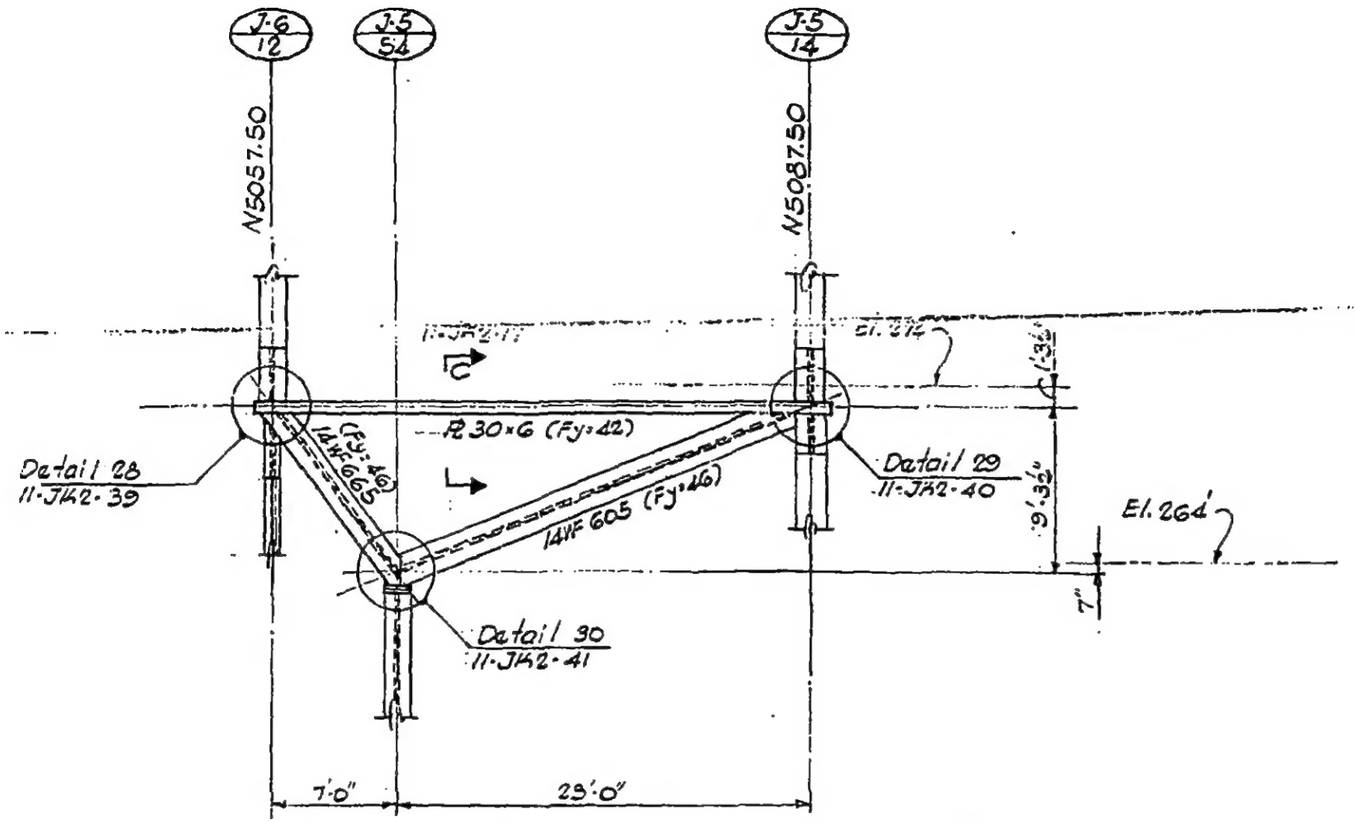
PROJECT THE WORLD TRADE CENTER | TITLE TRUSS ELEVATION | DATE 5-15-67

REVISIONS

5-1-68



TRUSS JT-7

1/8" = 1'-0"

(at W9990.00)

Notes:

1. All steel shall have a minimum yield stress of 36ksi, except as noted.
2. For tie-bar (top chord) material see note on Detail A, 11-JK2-9

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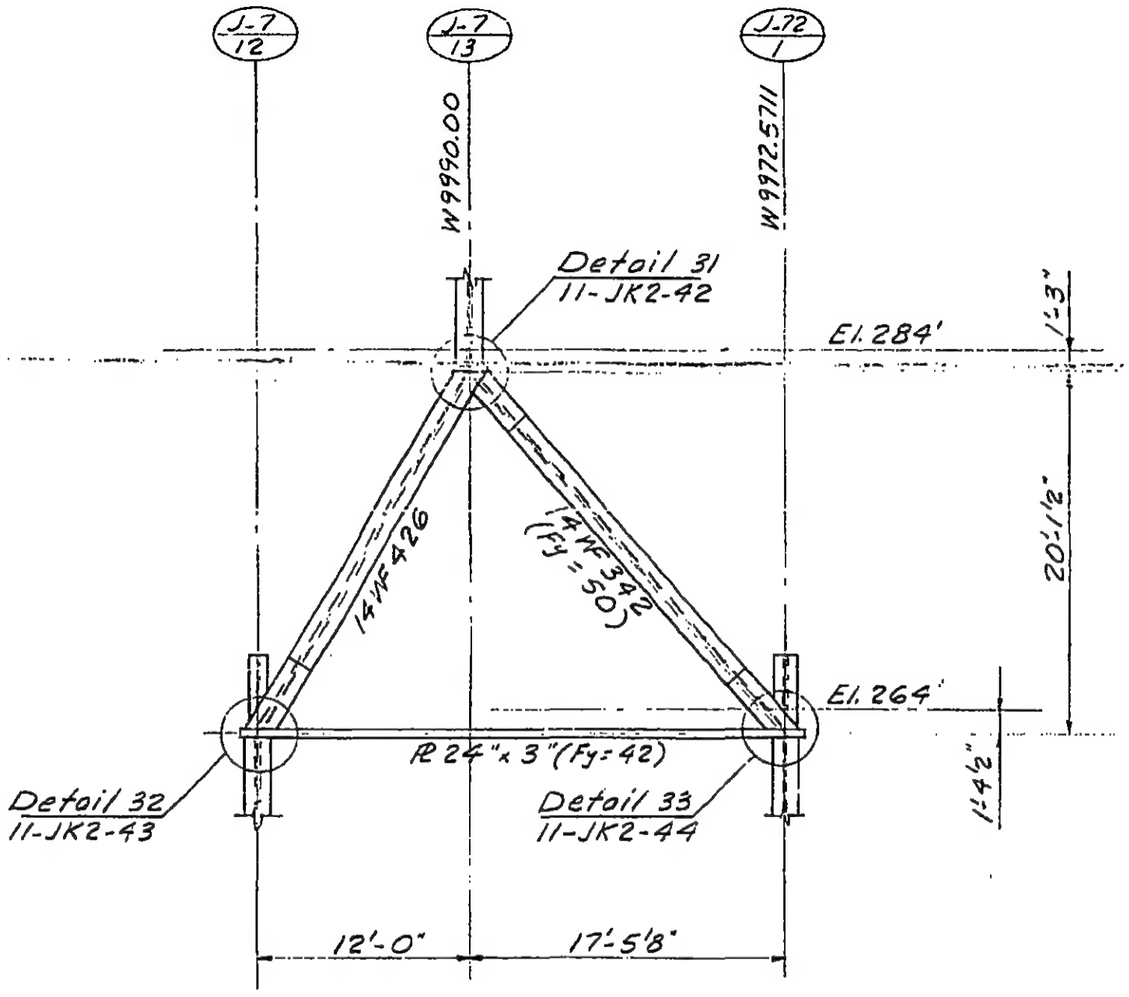
11-J1-8

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS ELEVATION | DATE 5-15-67

REVISIONS

5-1-68



TRUSS JT-8

⅛" = 1'-0"

(at N5027.50)

Notes:

1. For intermediate support of bottom chord see Detail B, 11-JK2-9.
2. All steel shall have a minimum yield stress of 36 ksi, except as noted.
3. For tie-bar (bottom chord) material see note on Detail A, 11-JK2-9.

11-J1-9

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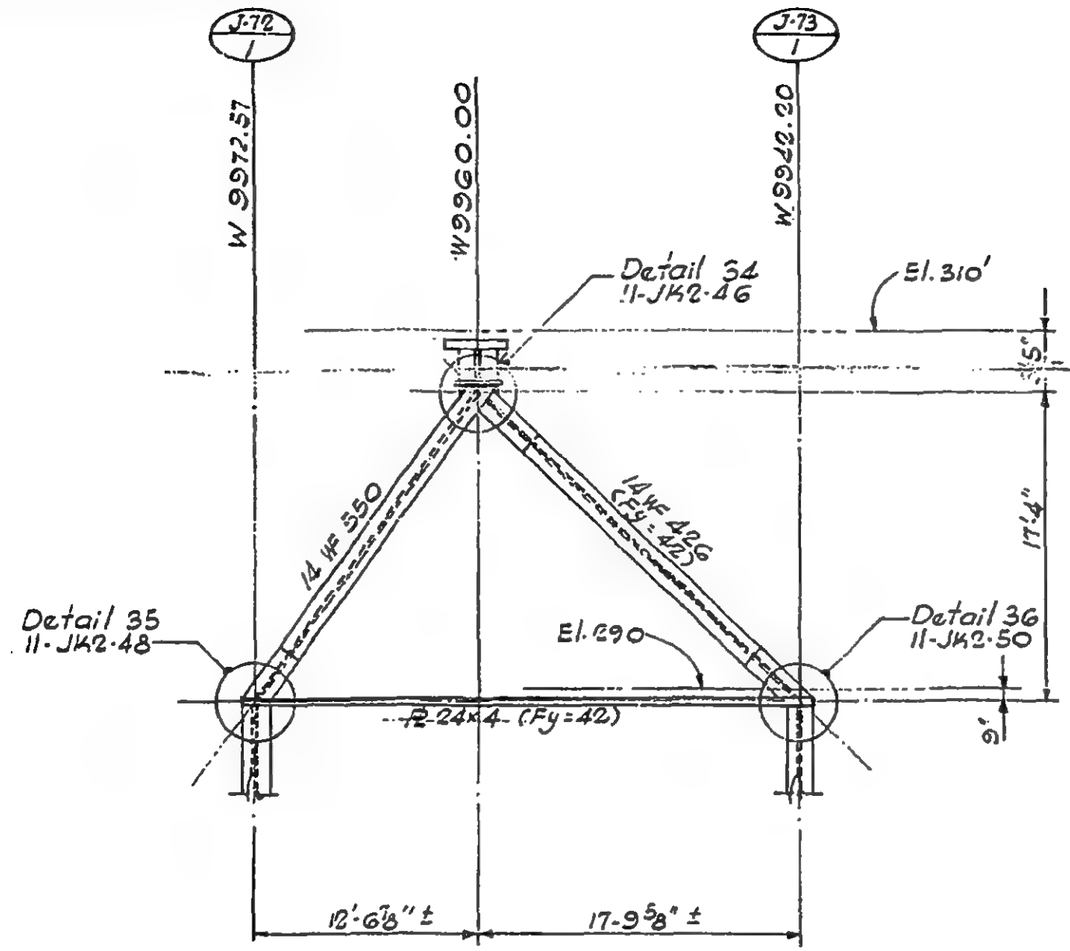
PROJECT THE WORLD TRADE CENTER | TITLE TRUSS ELEVATION | DATE 5-15-67

REVISIONS

6-7-68



TRUSS JT-9

1/8" = 1'-0"

(at N5027.50)

Notes:

1. All steel shall have a minimum yield stress of 36 KSI, except as noted.
2. For tie-bar (bottom chord) material see note on Detail A, 11-JK2-9.

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11-J1-10

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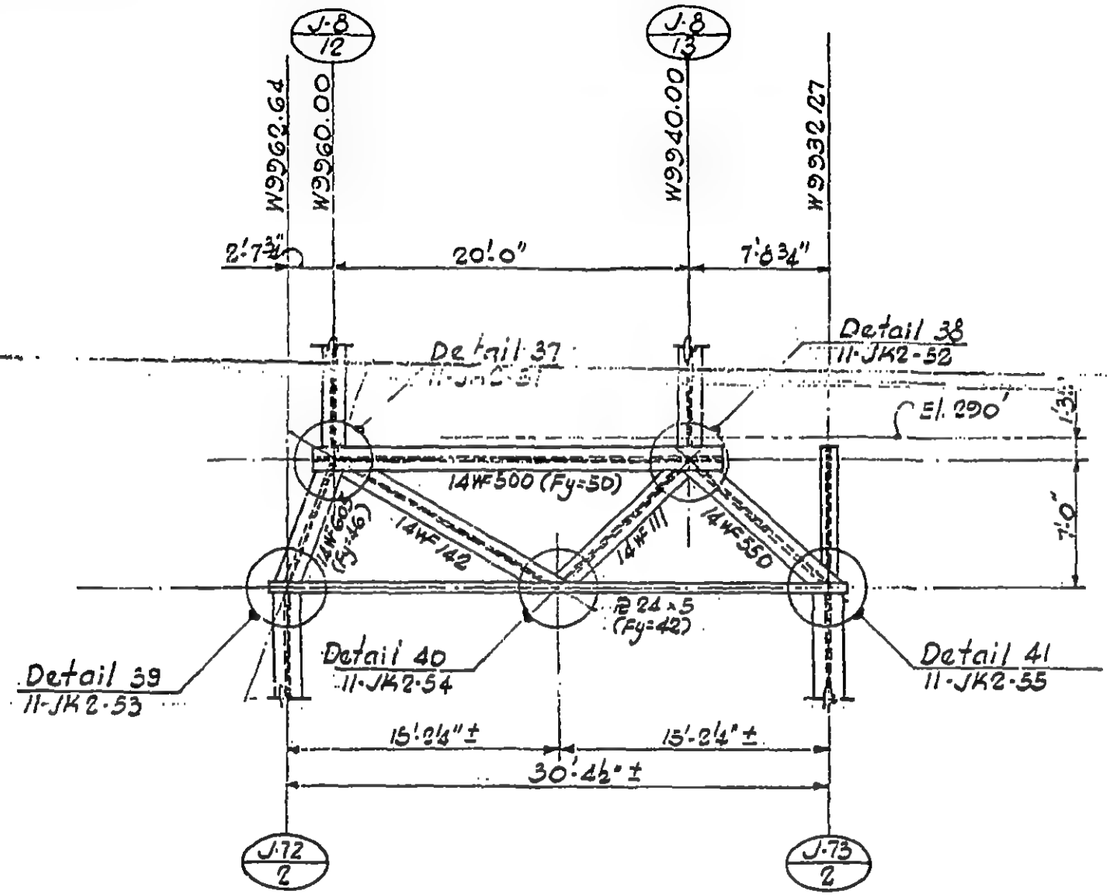
PROJECT THE WORLD TRADE CENTER | TITLE TRUSS ELEVATION | DATE 5-15-67

REVISIONS

6-7-68



TRUSS JT-10

1/8" = 1'-0"

(at N4997.50)

Notes:

1. All steel shall have a minimum yield stress of 36 ksi, except as noted.
2. For tie-bar (bottom chord) material see note on Detail A, 11-JK2-9.

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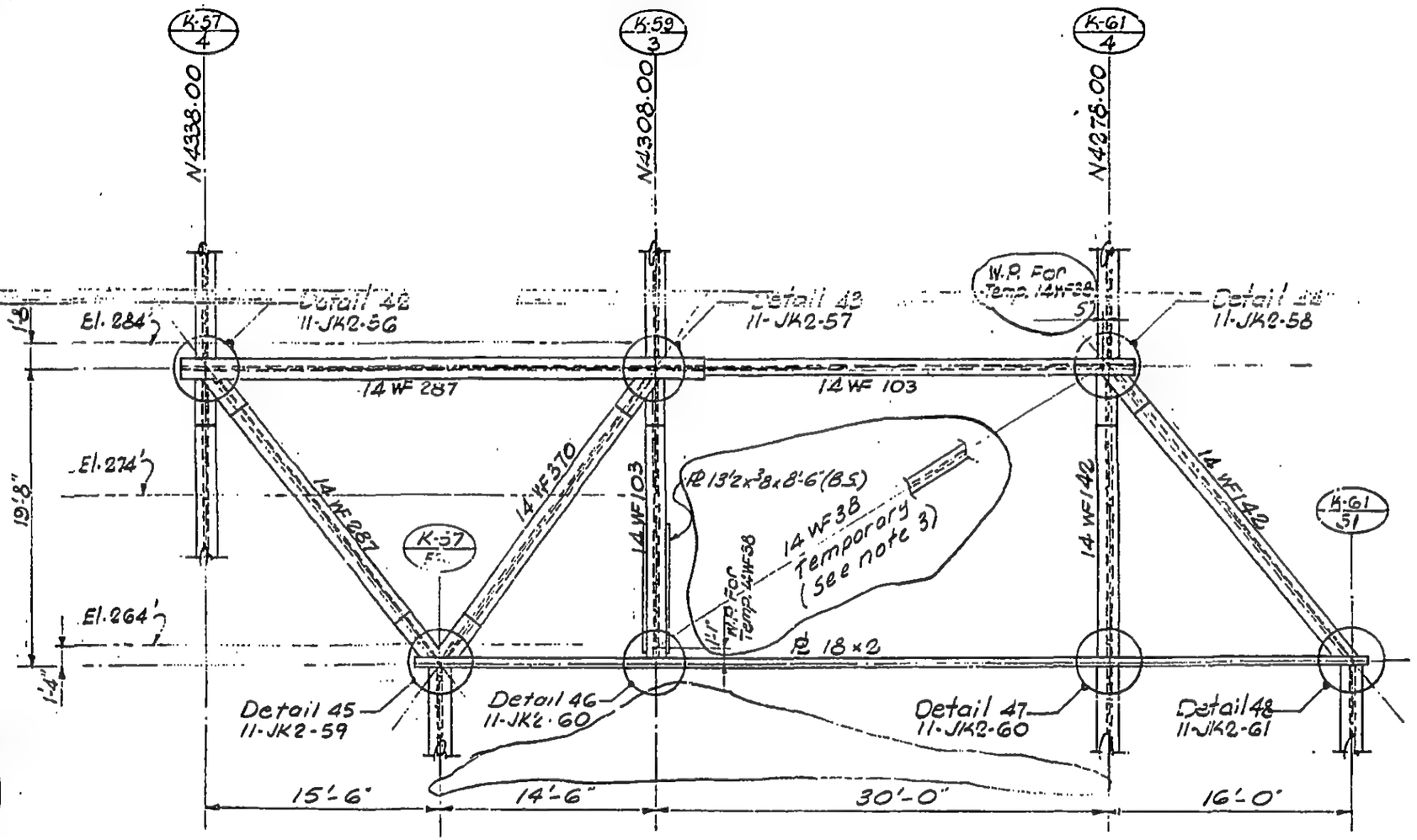
11-J1-11

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS ELEVATION (KT-3) | DATE 5-15-67

REVISIONS
9-4-68
10-15-68
3-21-69



TRUSS KT-3
1/8" = 1'-0"
(at W10034 ±)

Notes:
1. For intermediate support of bottom chord, see Detail B, 11-JK2-9.
2. All steel shall have a minimum yield stress of 36 ksi, except as noted.
3. Temporary 14WF38 to remain in place until column K57-4 is erected with framing and floor slab at this column complete to El. 332, when it shall be removed.

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DESIGNED
DRAWN S.C.
REVIEWED E.L.

11-K1-26

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON *Structural & Civil Engineers*

PROJECT	TITLE	DATE
THE WORLD TRADE CENTER	DRAWING INDEX	5/15/67

REVISIONS

10-20-67
4- 5-68
4-26-68
5- 1-68
6- 7-68
9- 4-68
10-15-68
1- 3-69
2- 3-69
3- 3-69
3-21-69
4-1-69
Printed 5-1-69

DRAWING NO.	TITLE
11-JK1-0	Drawing Index
11-J1-2 Thru 11	Truss Elevation (Zone J)
11-K1-26	Truss Elevation (Zone K)
11-JK2-2 Thru 61	Truss Details

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11-JK1-0

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PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 1 | DATE 5-15-67

REVISIONS
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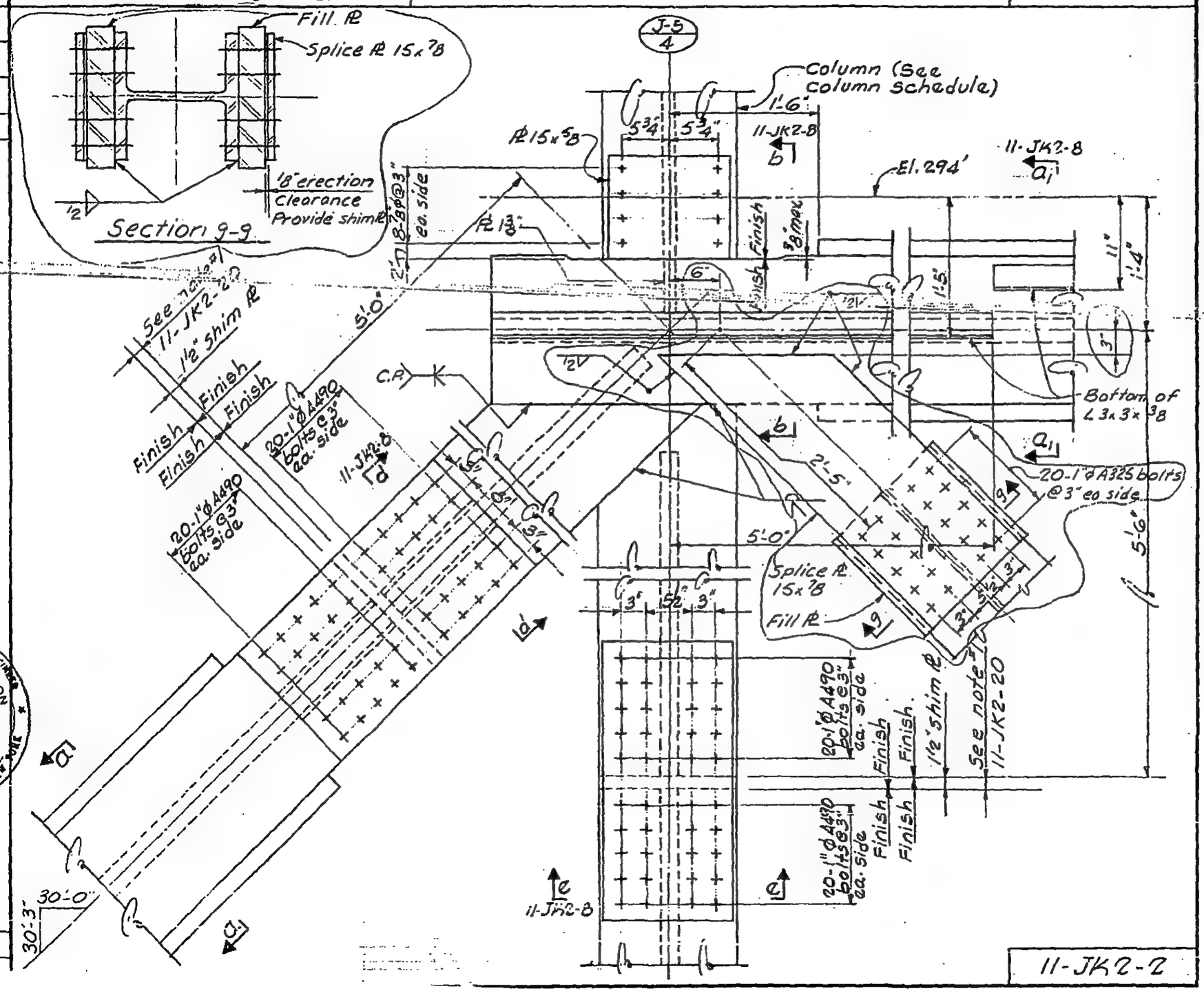

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DRAWN A.F.
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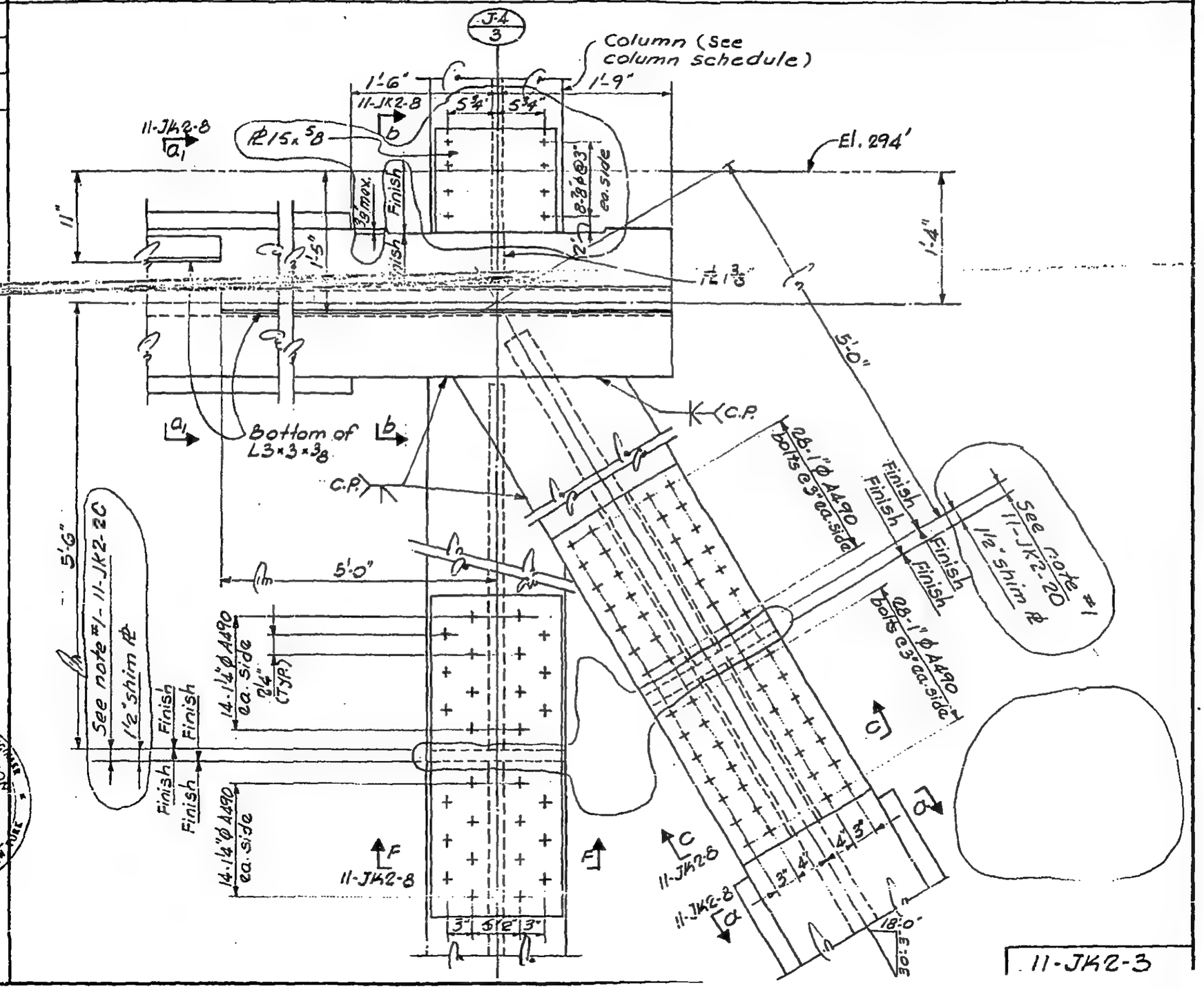
PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 2 | DATE 5-15-67

REVISIONS
4-5-68
4-26-68



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UNIVERSITY OF THE STATE OF NEW YORK

12

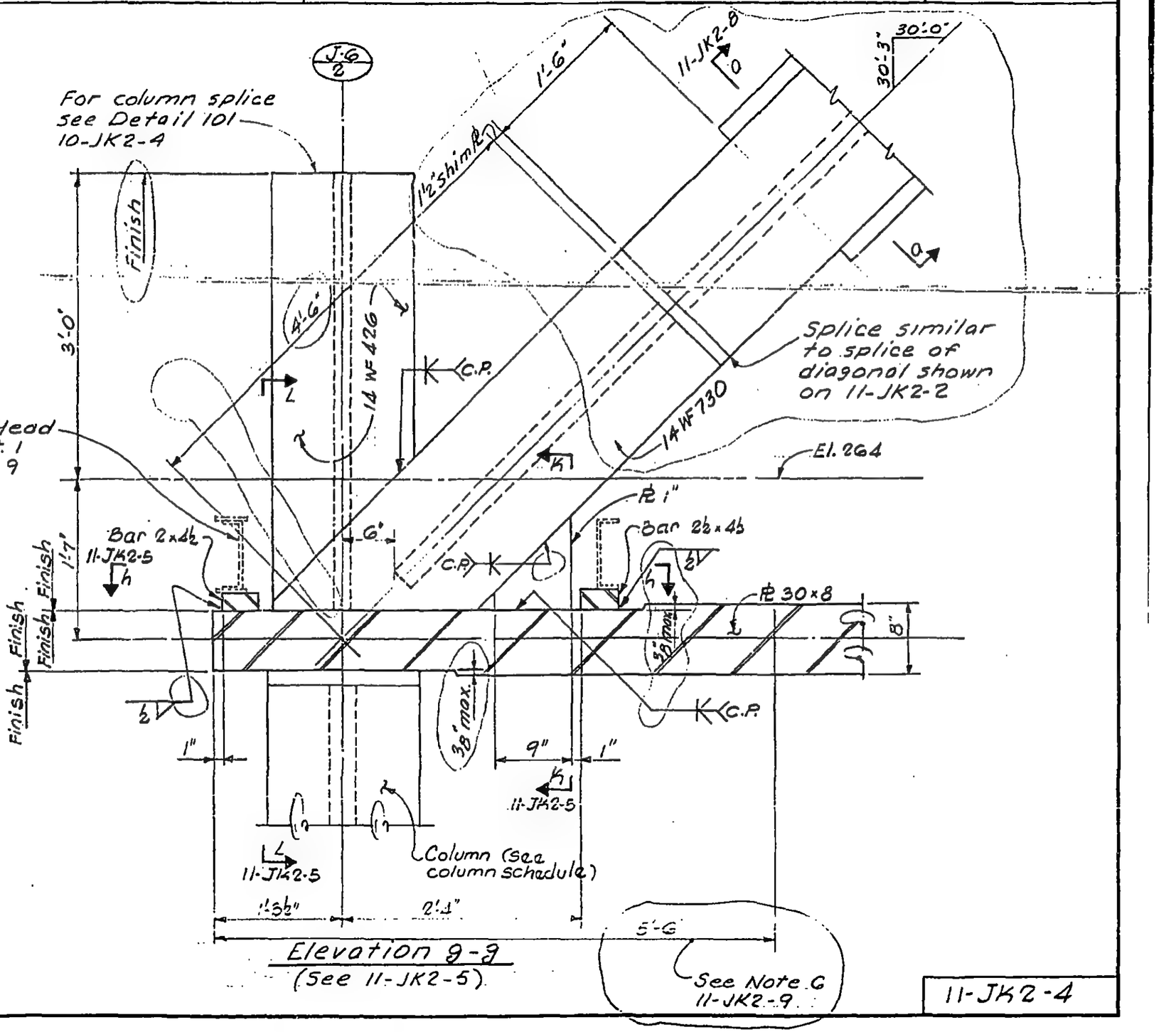
SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 3 | DATE 5-15-67

REVISIONS

4-5-68

4-26-68



Elevation 9-9
(See 11-JK2-5)

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UNIVERSITY OF THE STATE OF NEW YORK

11-JK2-4

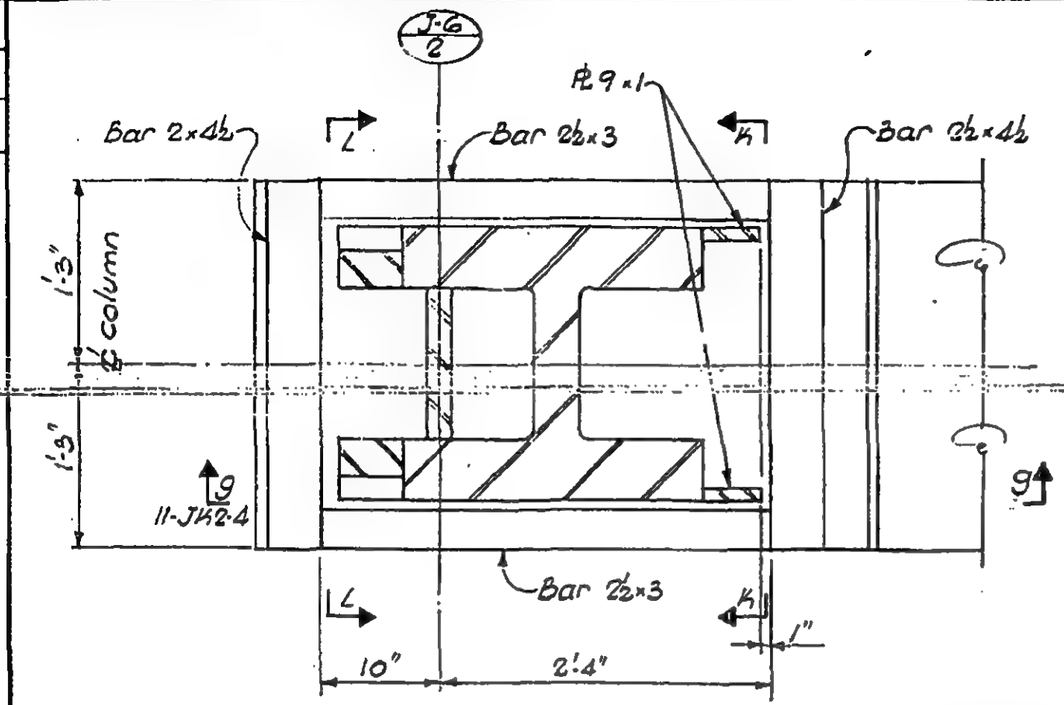
SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 3 | DATE 5-15-67

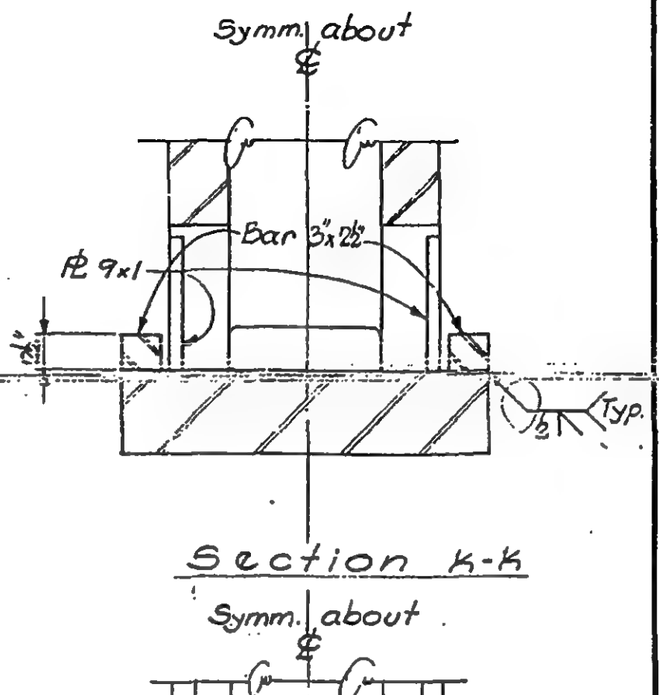
REVISIONS

4-5-68

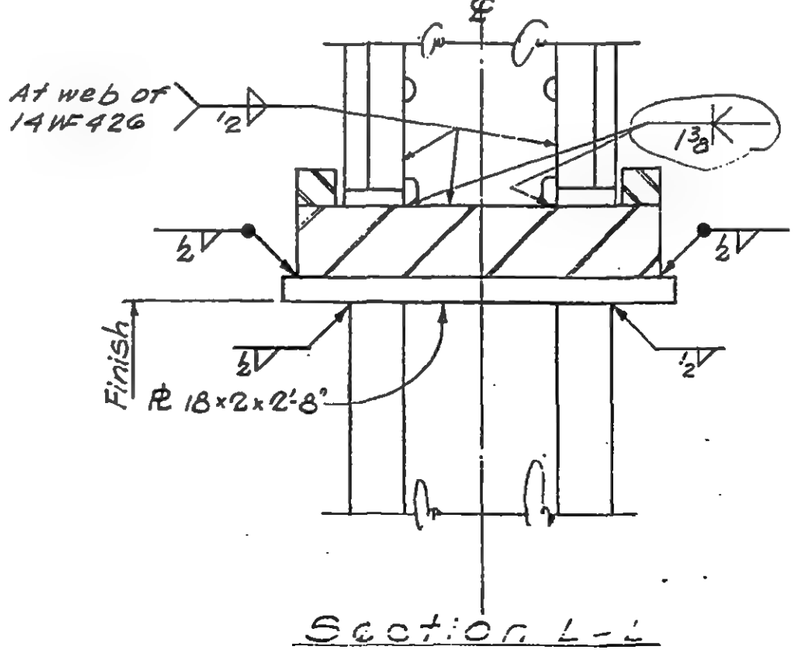
4-26-68



PLAN h-h



Section K-K



Section L-L

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11-JK2-5

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAILS | DATE 5-15-67

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4-26-68
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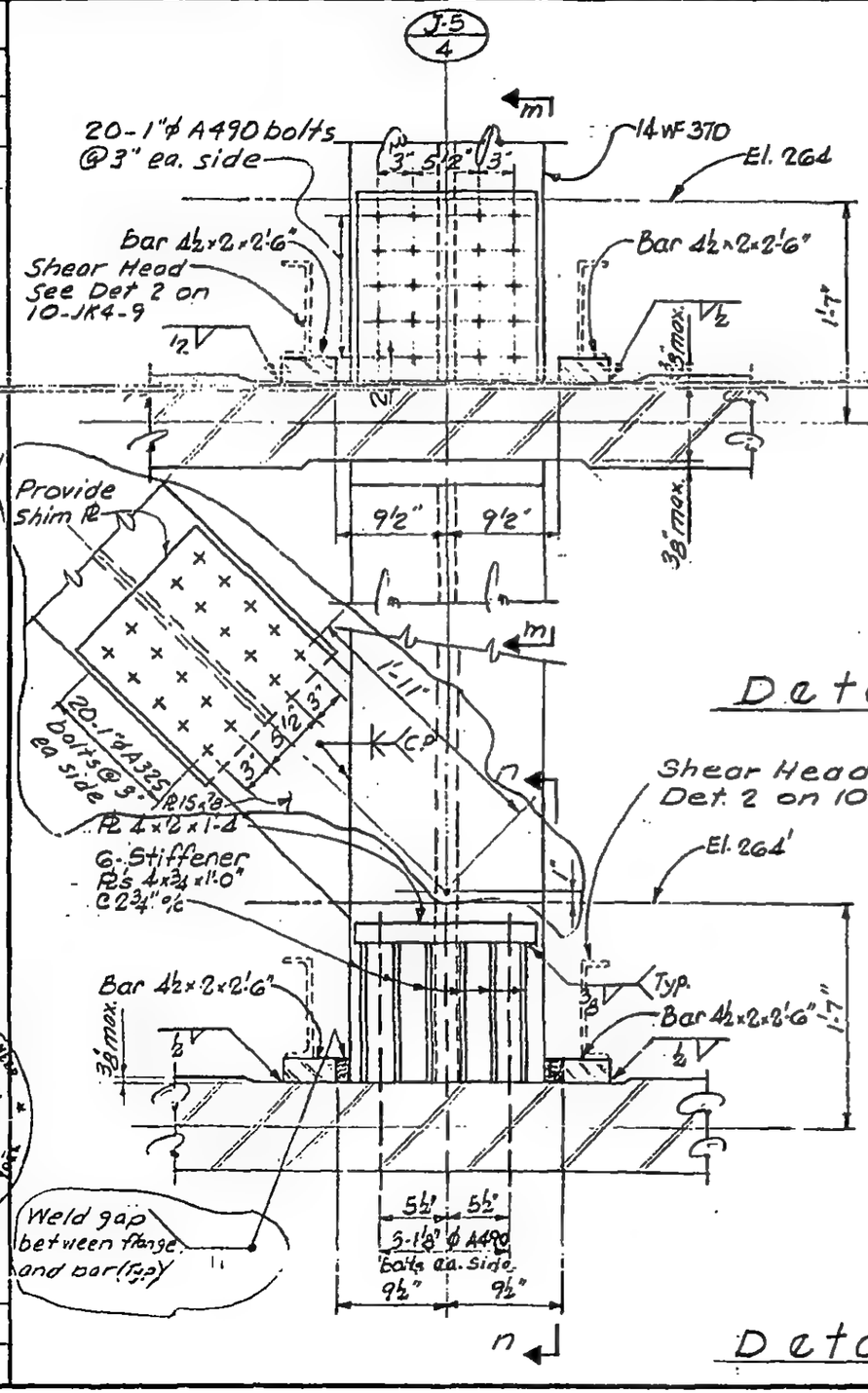
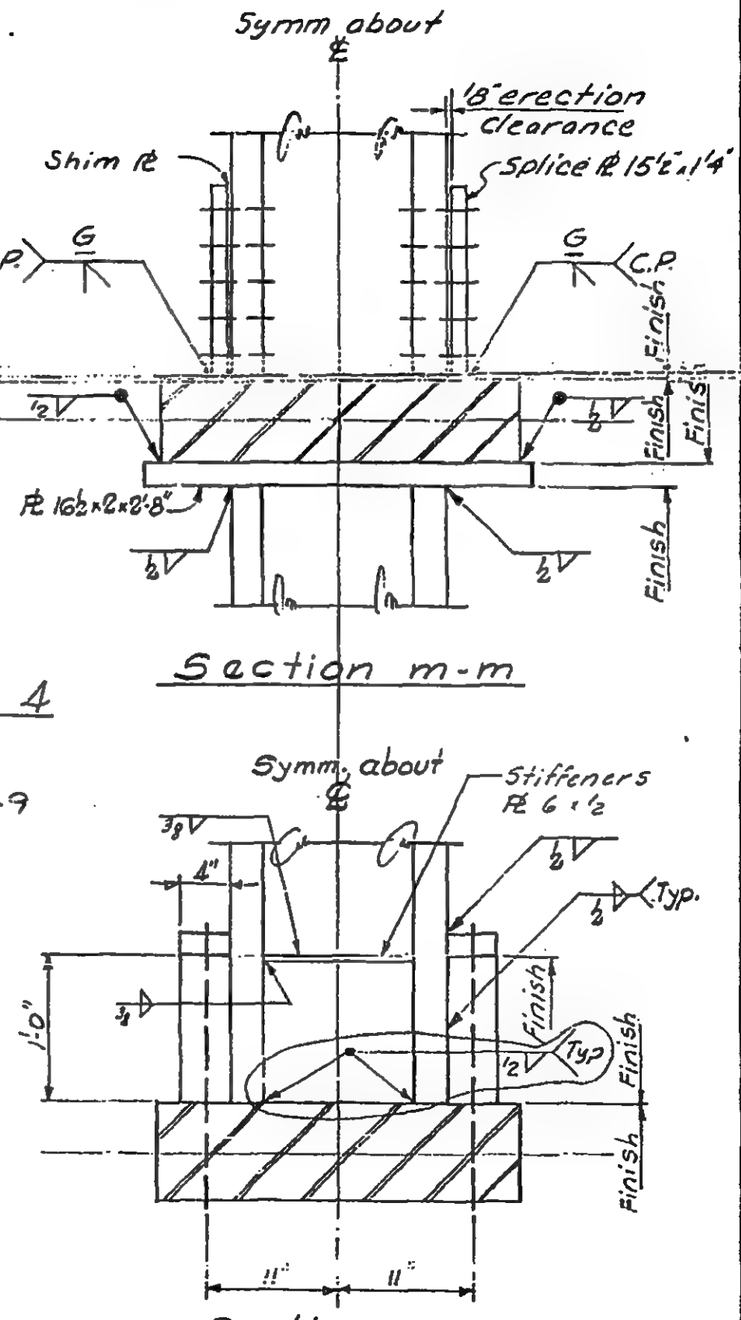


Detail 4

Detail 5



Section m-m

Section n-n

11-JK2-6

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No. 34360
UNDER LAWS OF THE STATE OF NEW YORK

DRAWN A.F.
REVIEWED E.L.

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PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 6 | DATE 5-15-67

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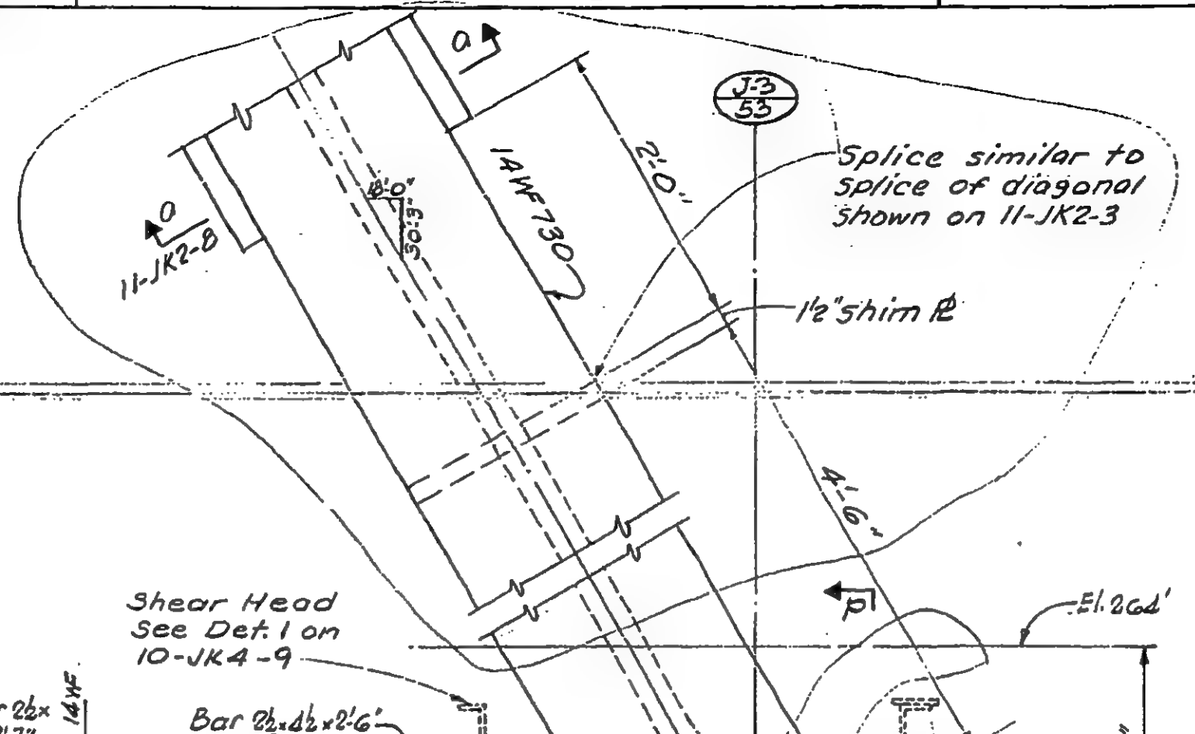

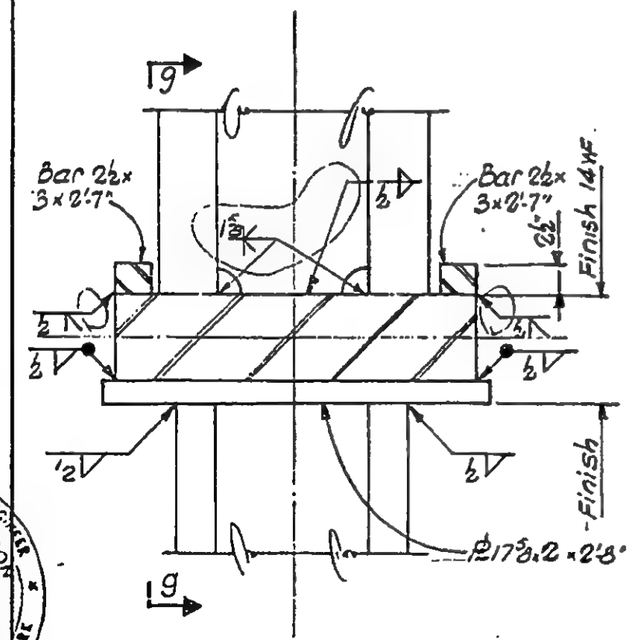

Section p-p

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UNIVERSITY OF THE STATE OF NEW YORK

11-JK2-7

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAILS | DATE 5-15-67

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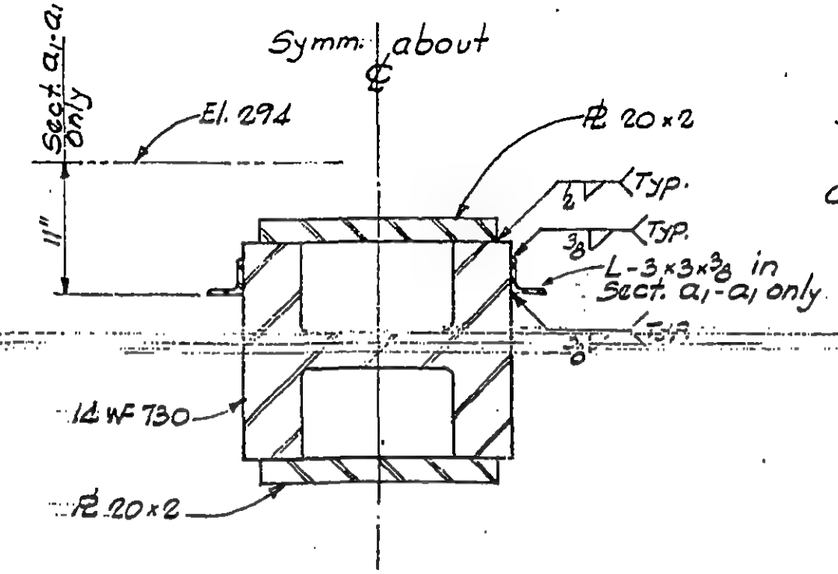

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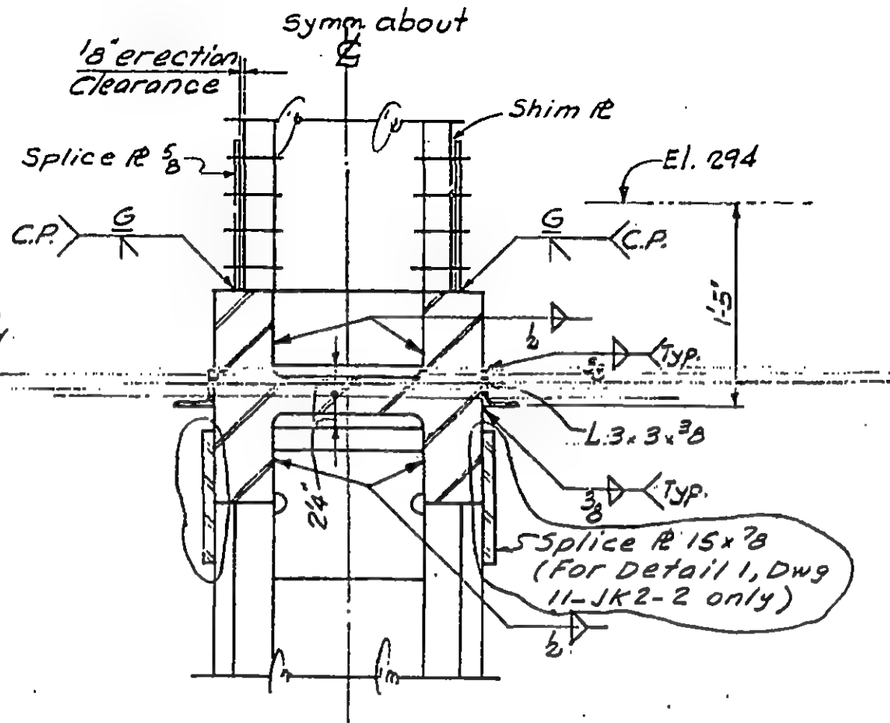
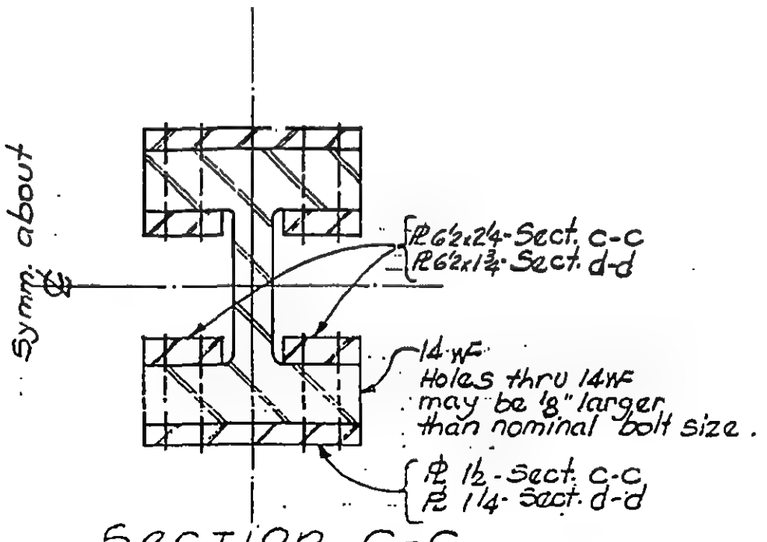
Section a_1-a_1



Section b-b



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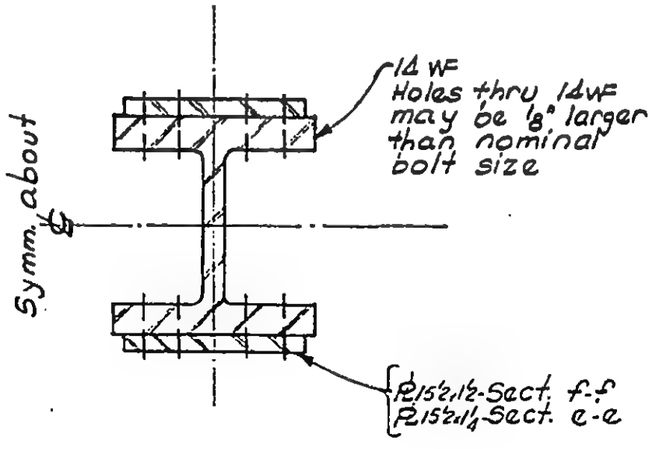
Section d-d



Section e-e
Section f-f

11-JK2-8

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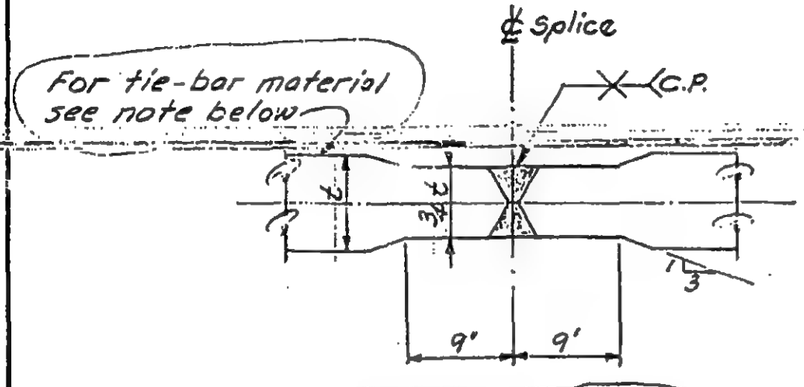
PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAILS | DATE 5-15-67

REVISIONS

4-5-68

4-26-68



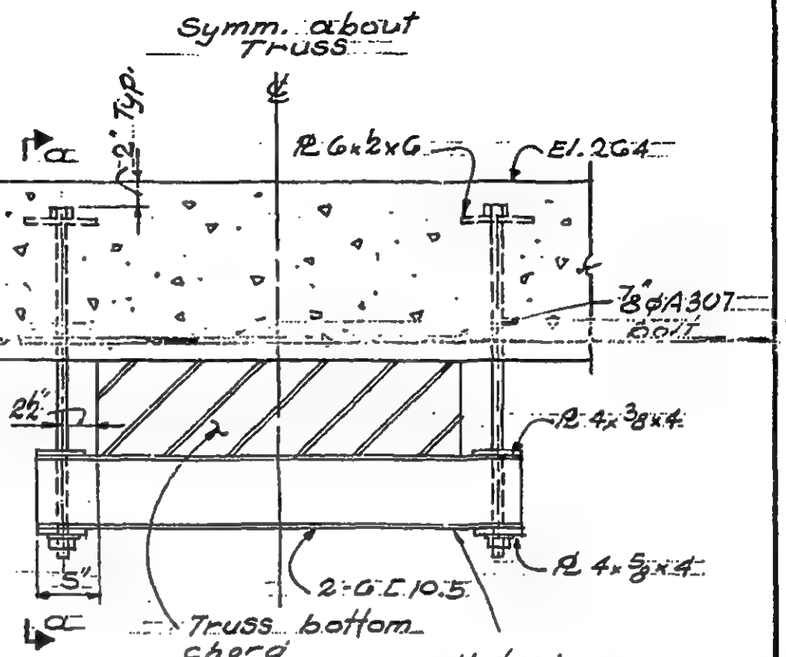
Typical detail for shop splice of single plate chord members

NOTE:

Tie bar material shall conform to the following:

1. To be made to coarse grain practice.
2. To be silicon killed.
3. To be forging quality.
4. To be ordered to vacuum degassed practice with extra top discard.
5. To be 100% ultrasonically inspected in specified areas in accordance with ASTM A435-65.
6. In the locations shown in the drawings, steel plate shall be free of gross internal discontinuities exceeding
   (a) 3 square inches measured as the projected area on the surface of the plate, or 3 inches in maximum dimension measured parallel to the plane of the plate, or both.
   (b) 1/32 inch when measured in the direction of the thickness of the plate.
   (c) The sum of the maximum dimensions of each discontinuity intersected by any plane perpendicular to the longitudinal axis of the plate shall not exceed 4 inches.
   (d) At surfaces on the plate where the plate is joined to the flanges of diagonal members, the plate shall be free of gross internal discontinuities exceeding 1 sq. inch in area within widths of 10 inches centered on the flanges of the diagonals and within a depth of 3 inches from the surface of the plate.

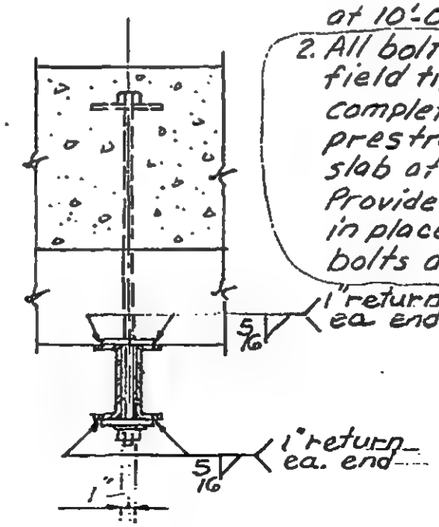
Detail A



Detail B

Notes:

1. Intermediate supports spaced at 10'-0" max.
2. All bolts to be field tightened after completion of prestress work for slab at El. 264. Provide temp. sup'ts. in place of [before bolts are tightened.



Section a-a

11-JK2-9

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PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 7 | DATE 5-15-67

REVISIONS
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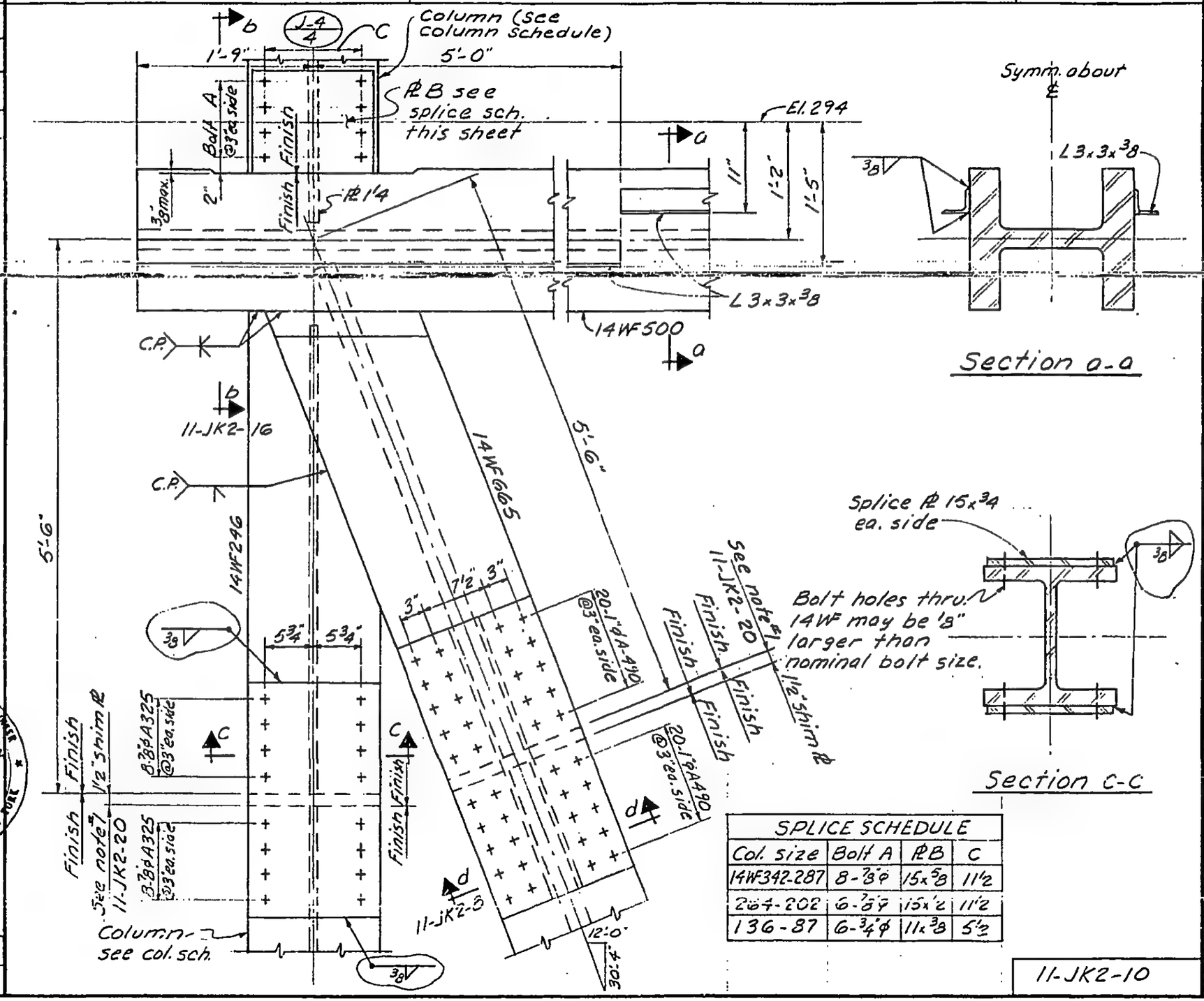

SPLICE SCHEDULE			
Col. size	Bolt A	PL B	C
14WF342-287	8-7/8"ø	15x5/8	11 1/2
264-202	6-7/8"ø	15x1/2	11 1/2
136-87	6-3/4"ø	11x3/8	5 1/2

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PROJECT THE WORLD TRADE CENTER. | TITLE TRUSS DETAIL 8 | DATE 5-15-67

REVISIONS
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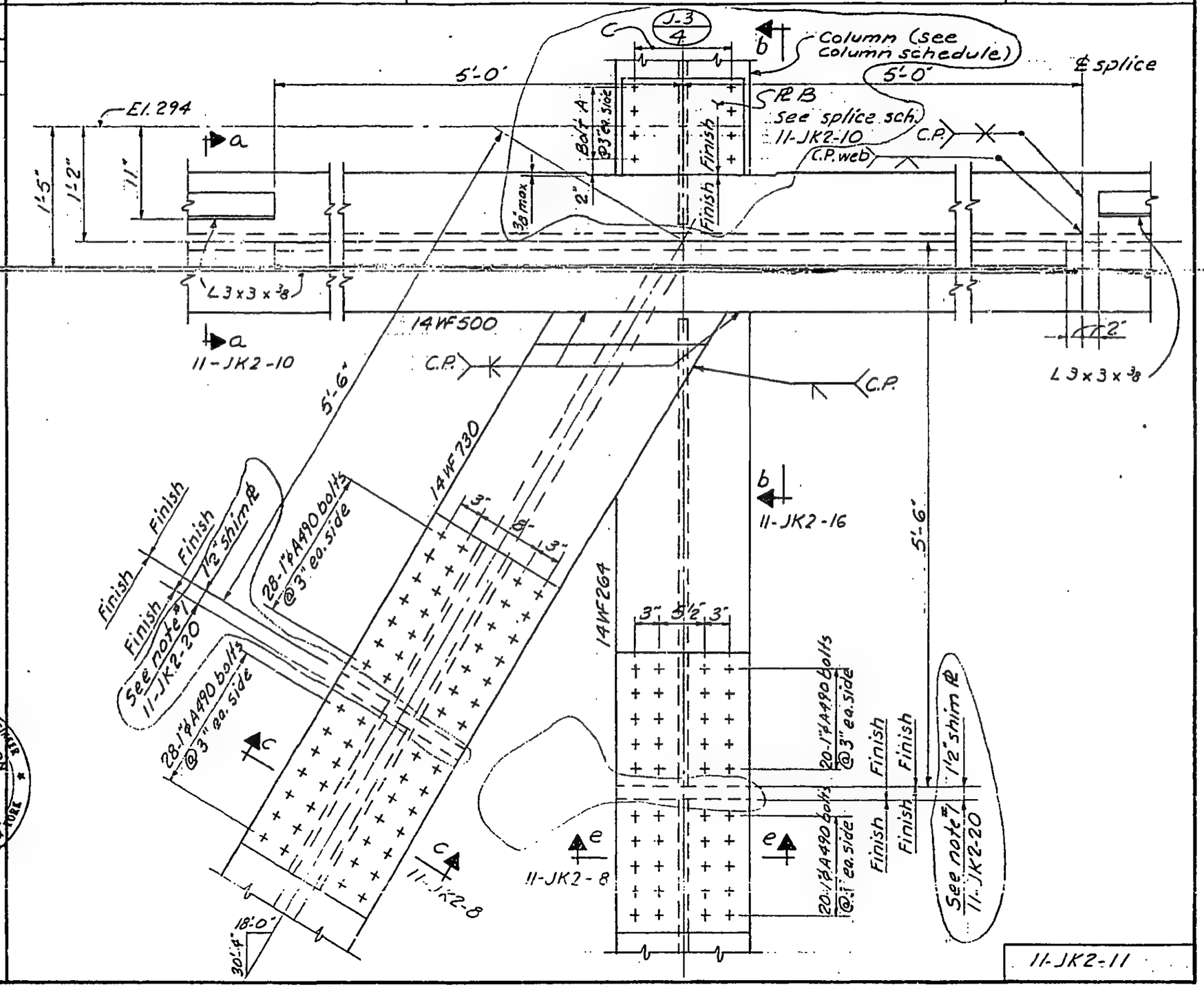

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PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 9 | DATE 5-15-67

REVISIONS
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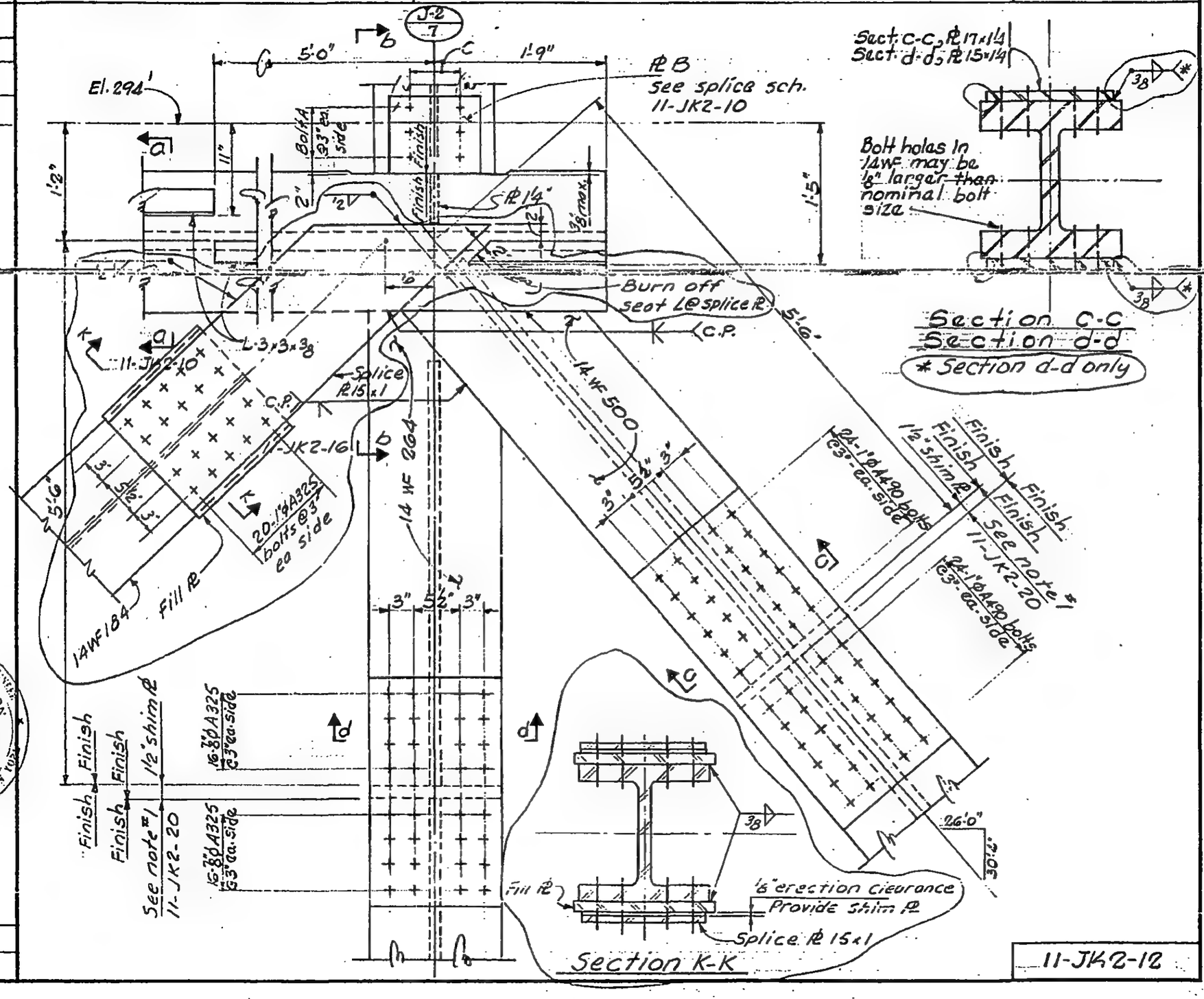

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PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 10 | DATE 5-15-67

REVISIONS
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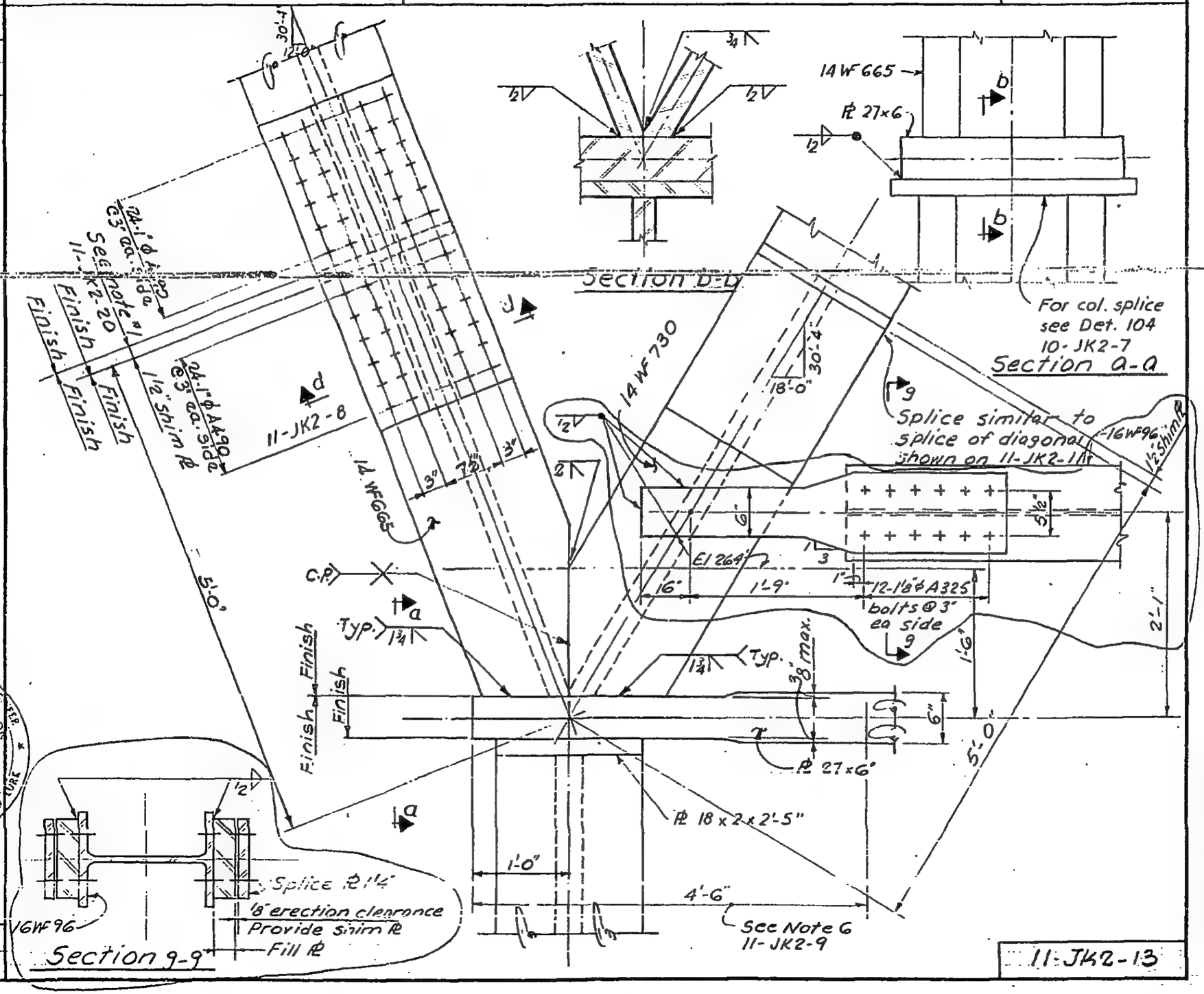

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PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 11 of 12 | DATE 5-15-67

REVISIONS
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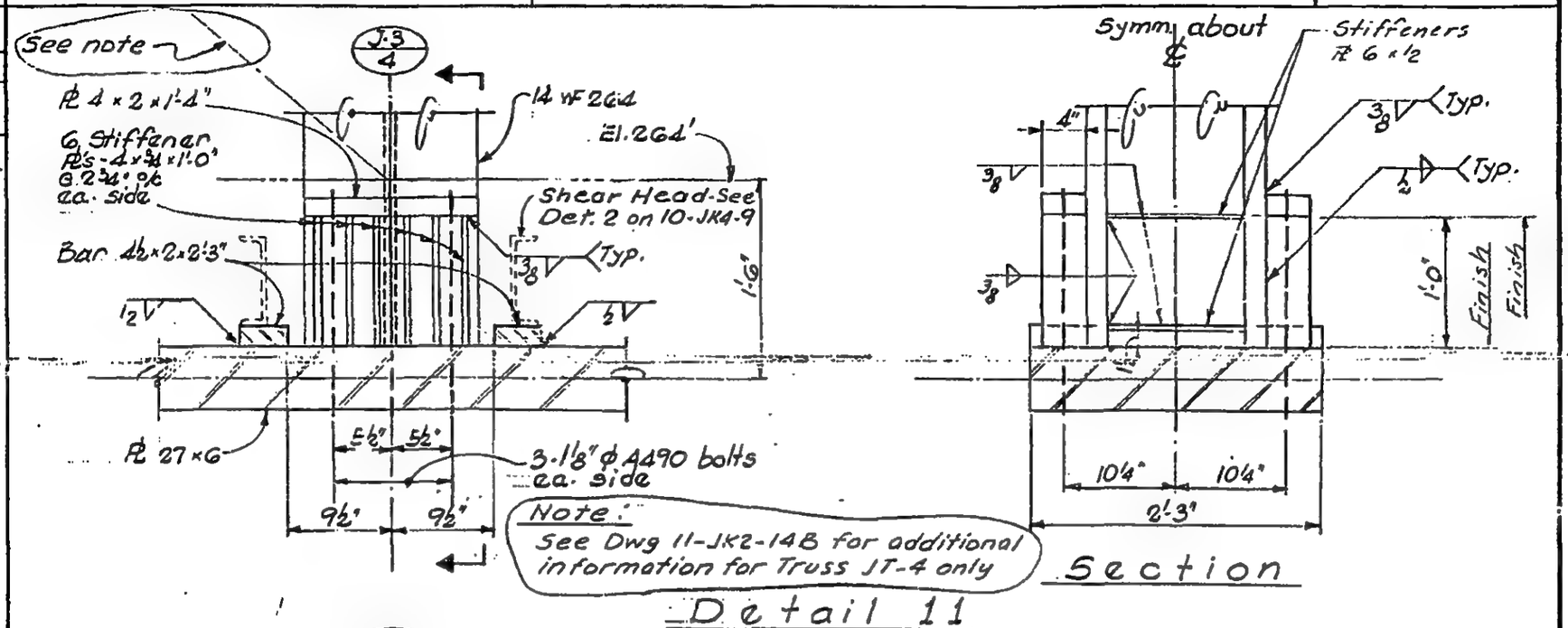
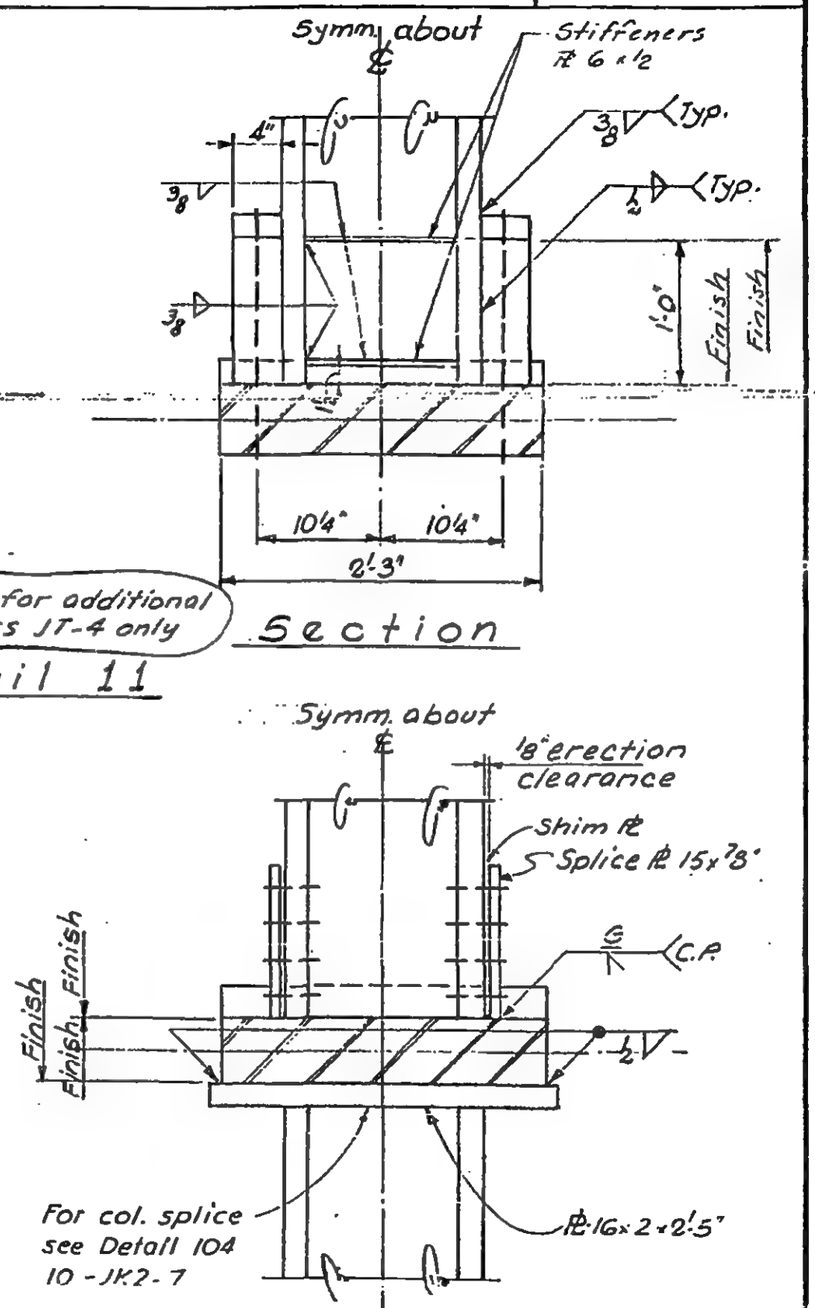
4-18-69



Note:
See Dwg 11-JK2-14B for additional information for Truss JT-4 only

Detail 11



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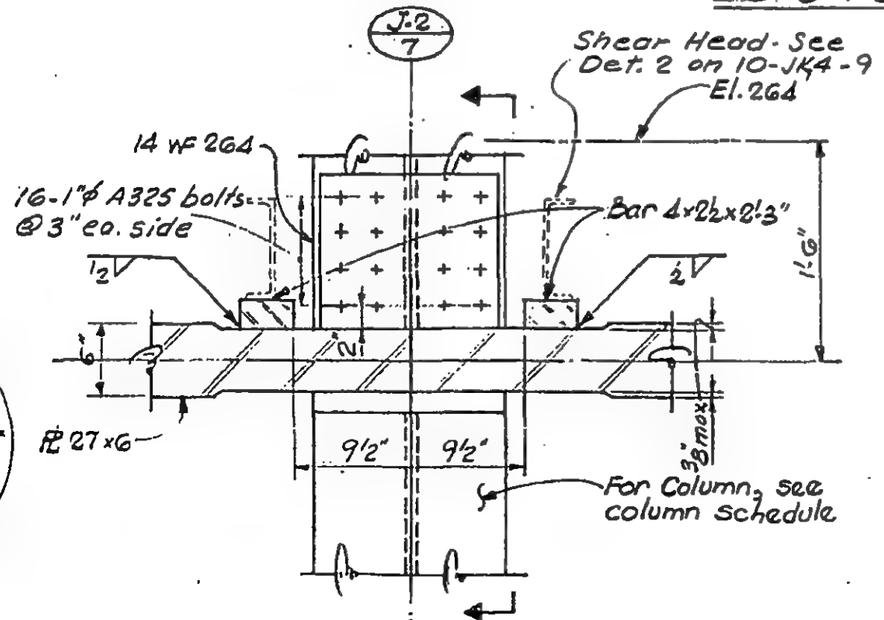

Detail 12

Section

JT EJK2-14

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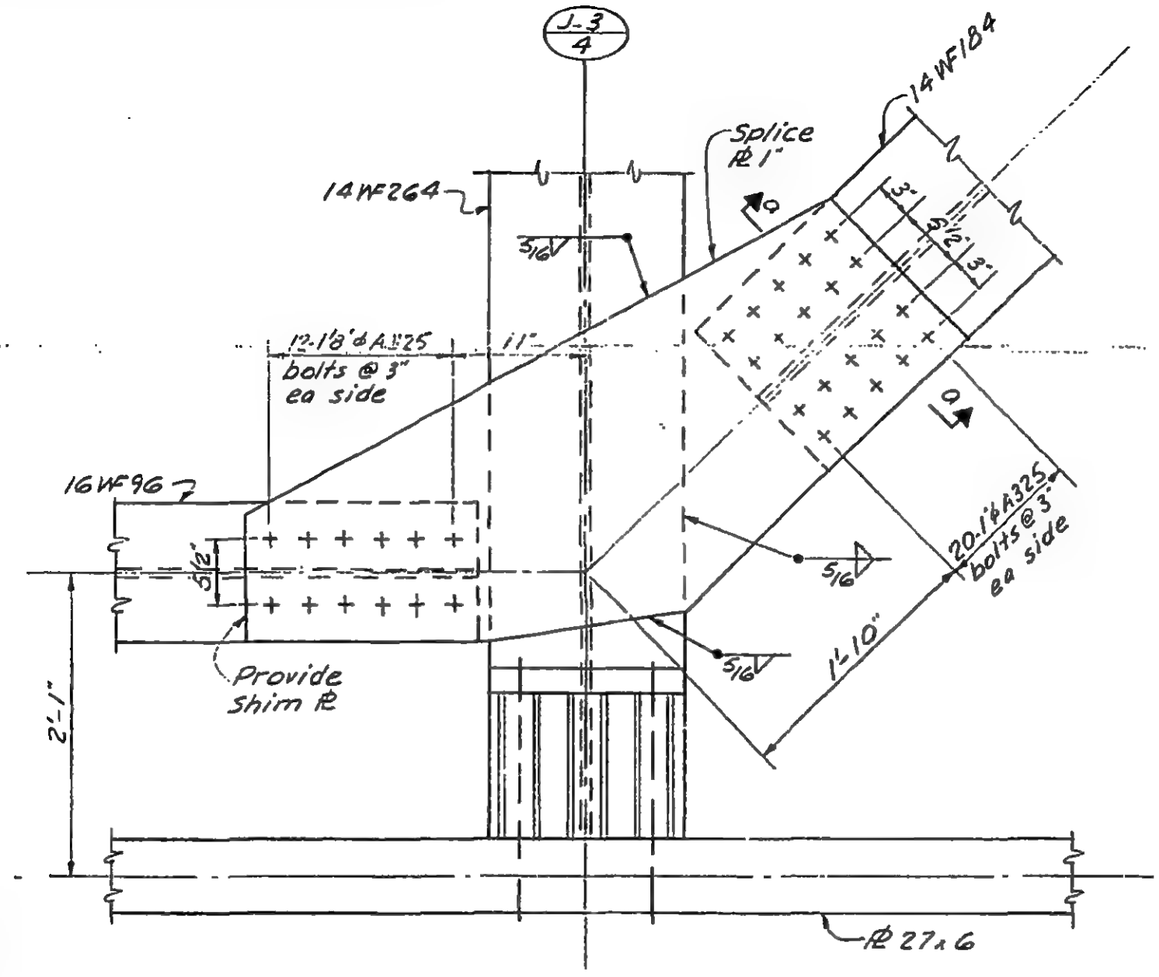
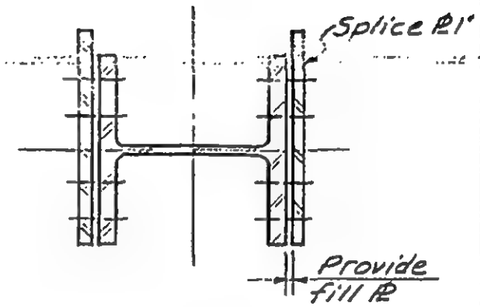
PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAILS (JT-2) | DATE 4-18-69

REVISIONS





Section a-a

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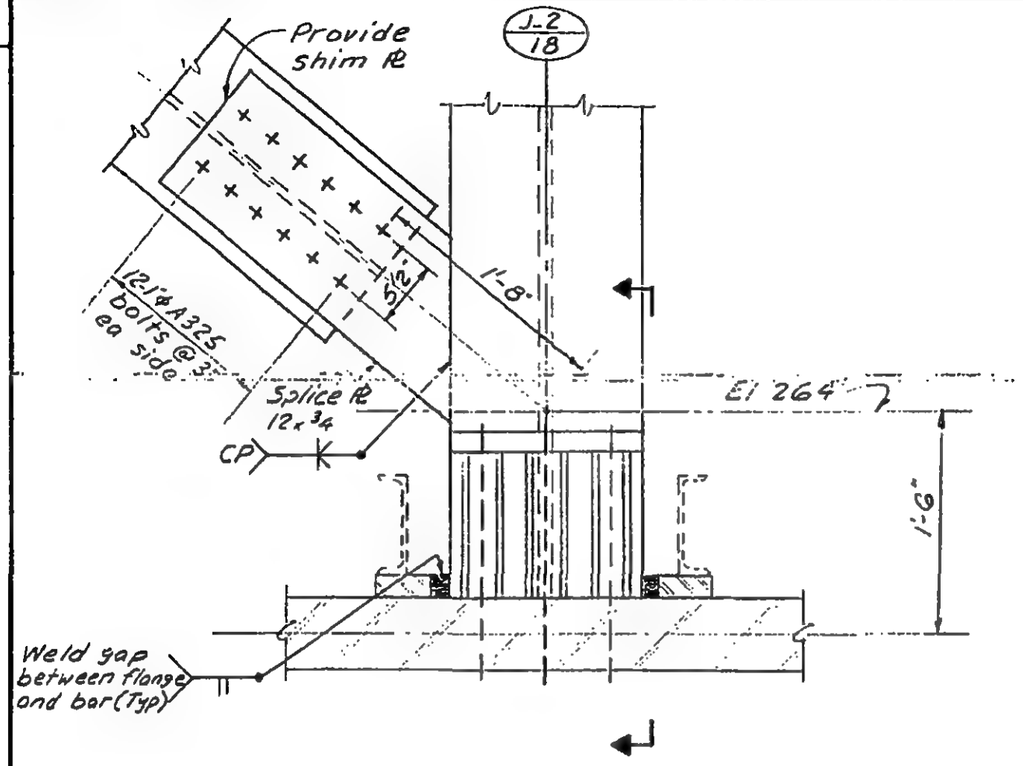
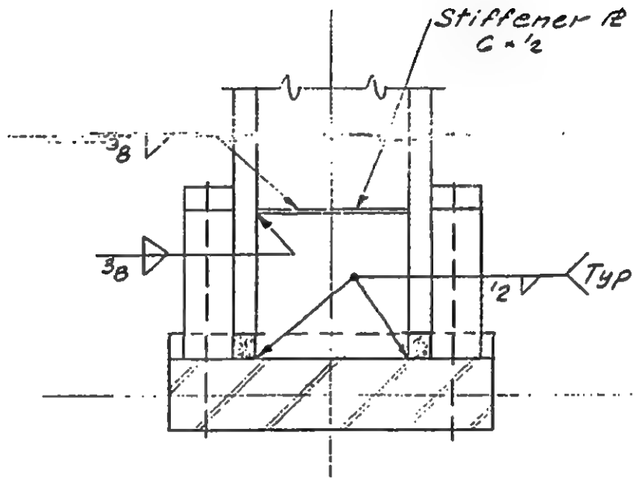
PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL (JT-4) | DATE 4-18-69

REVISIONS





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PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 13 | DATE 5-15-67

REVISIONS
4-5-68
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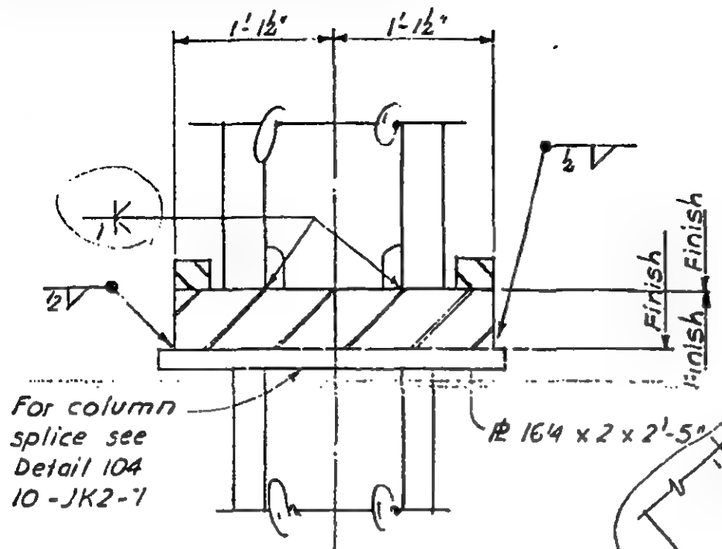
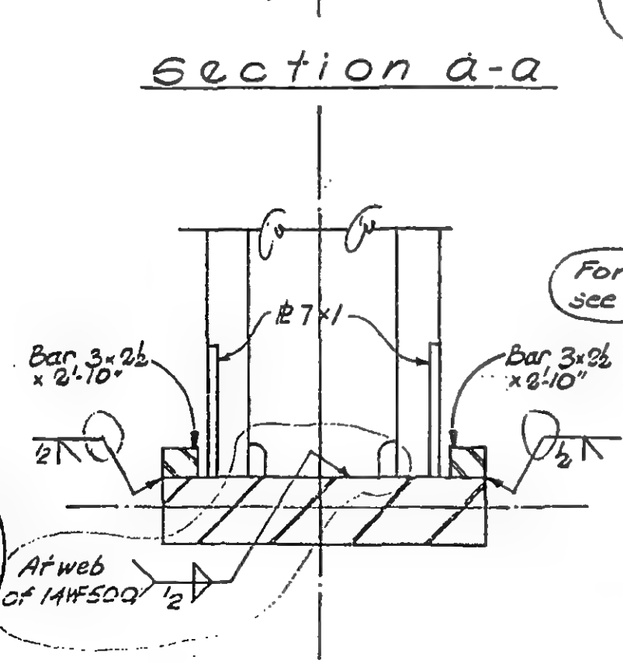
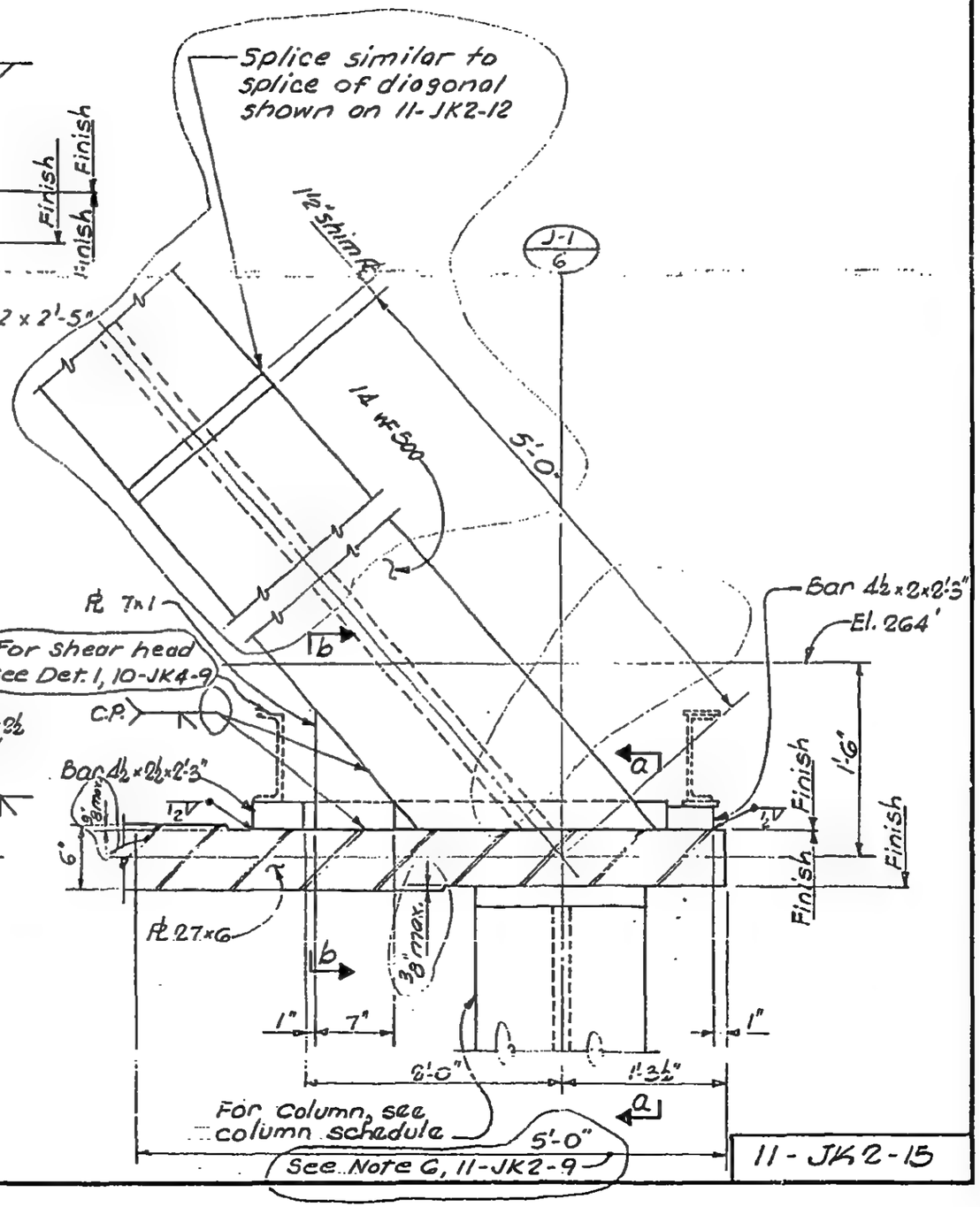


Section a-a



Section b-b



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PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAILS | DATE 5-15-67

REVISIONS
4-5-68
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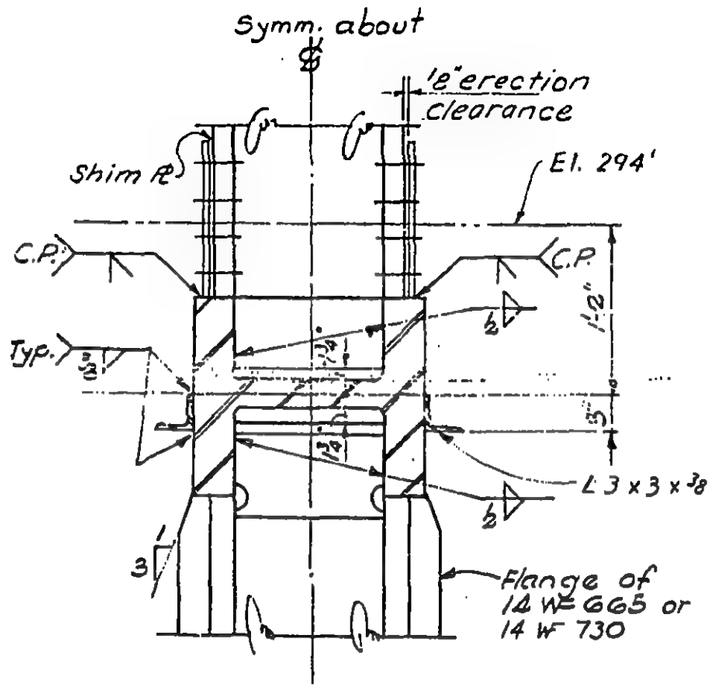

Section b-b

Note:
Splice ℞ 15x1 not shown
(For Detail 9, Dwg 11-JK2-12 only)

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PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 14 | DATE 5-15-67

REVISIONS
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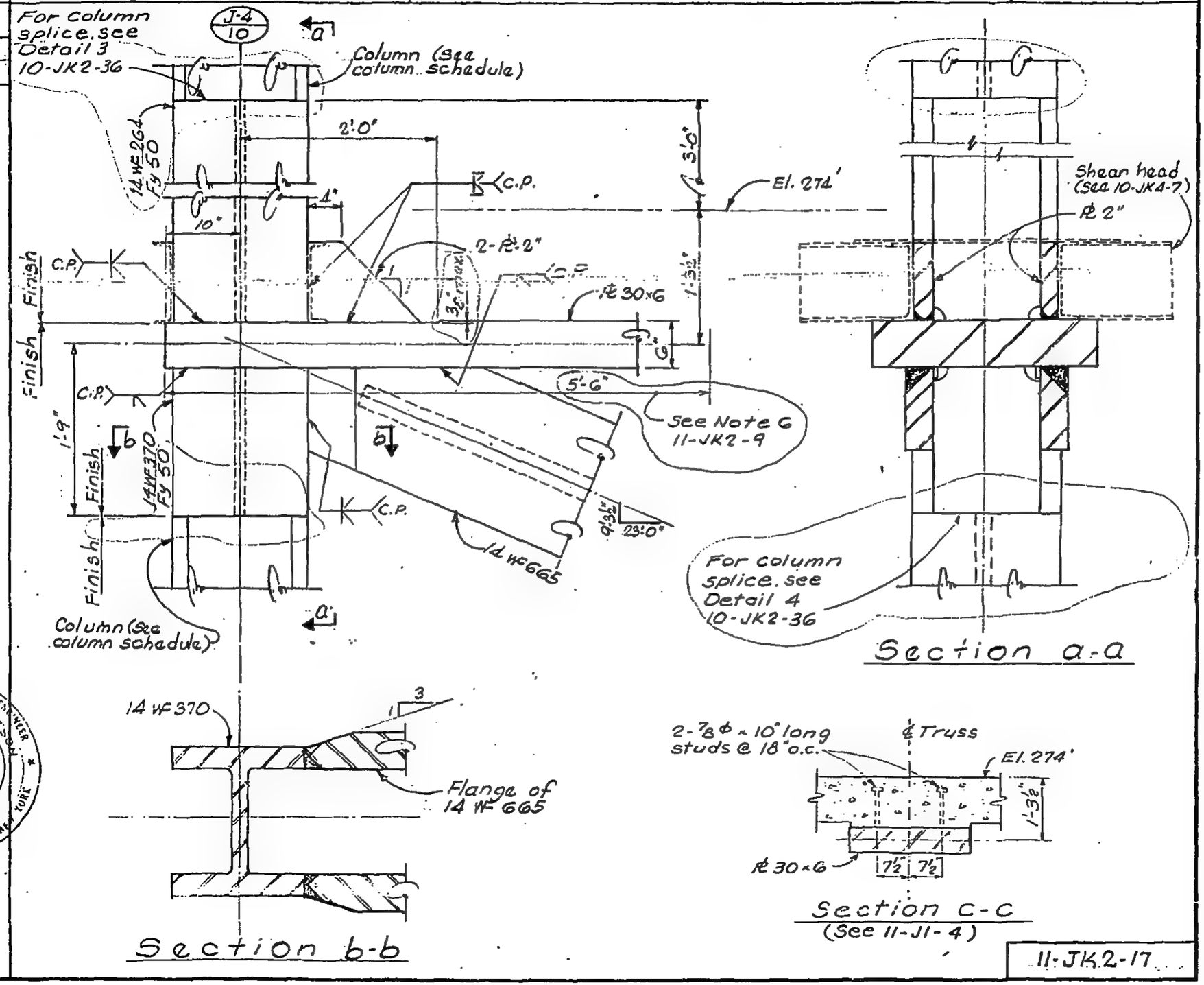

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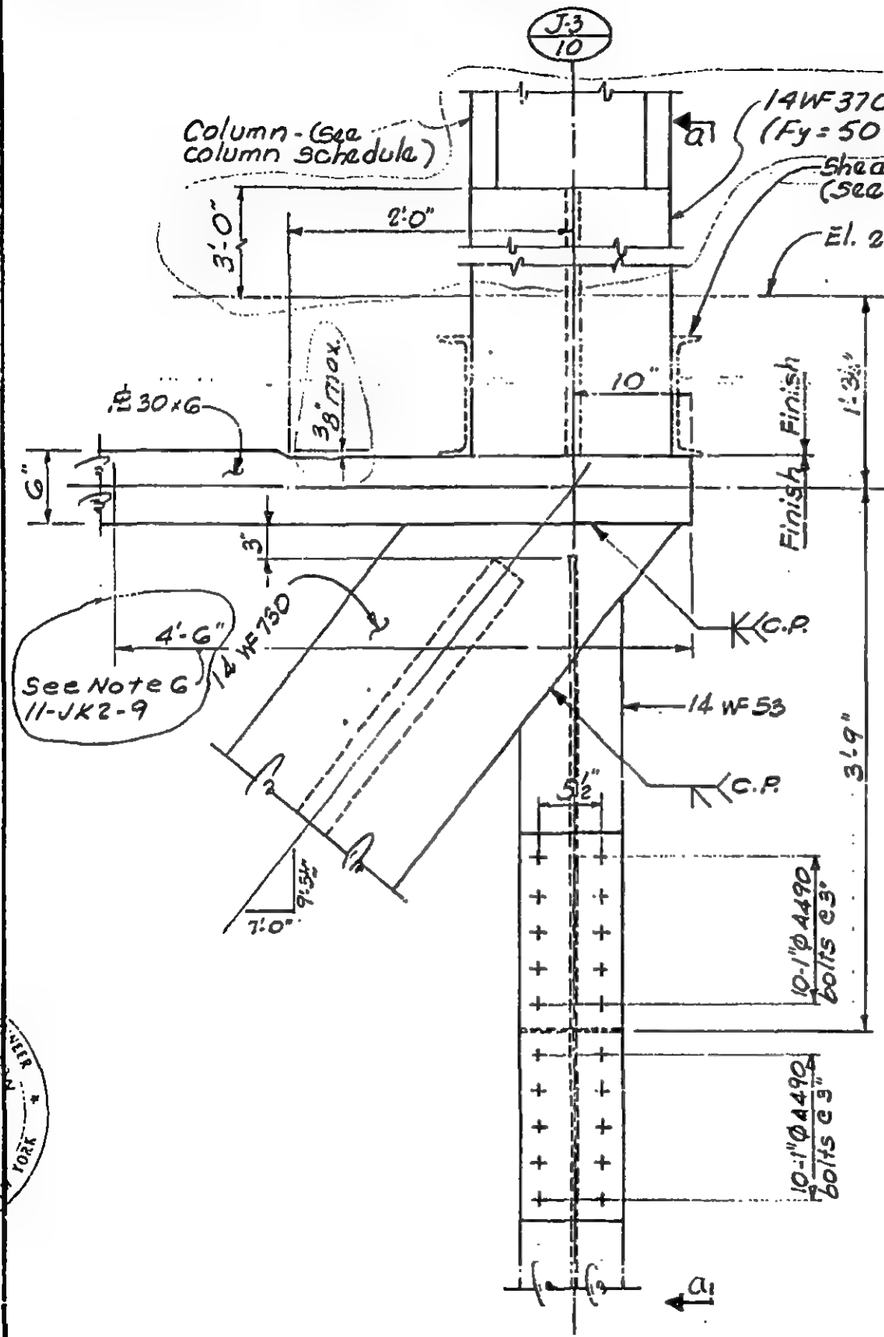
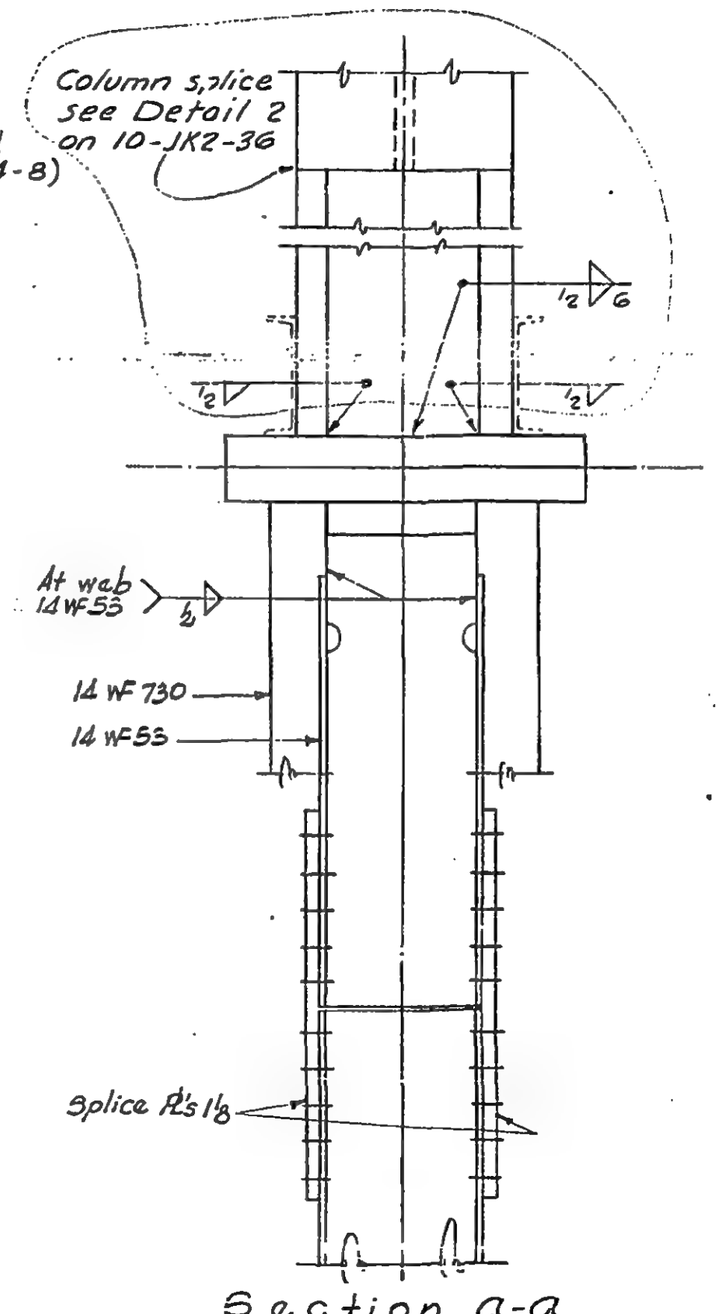
PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 15 | DATE 5-15-67

REVISIONS
4-5-68
4-26-68





Section a-a

11-JK2-18

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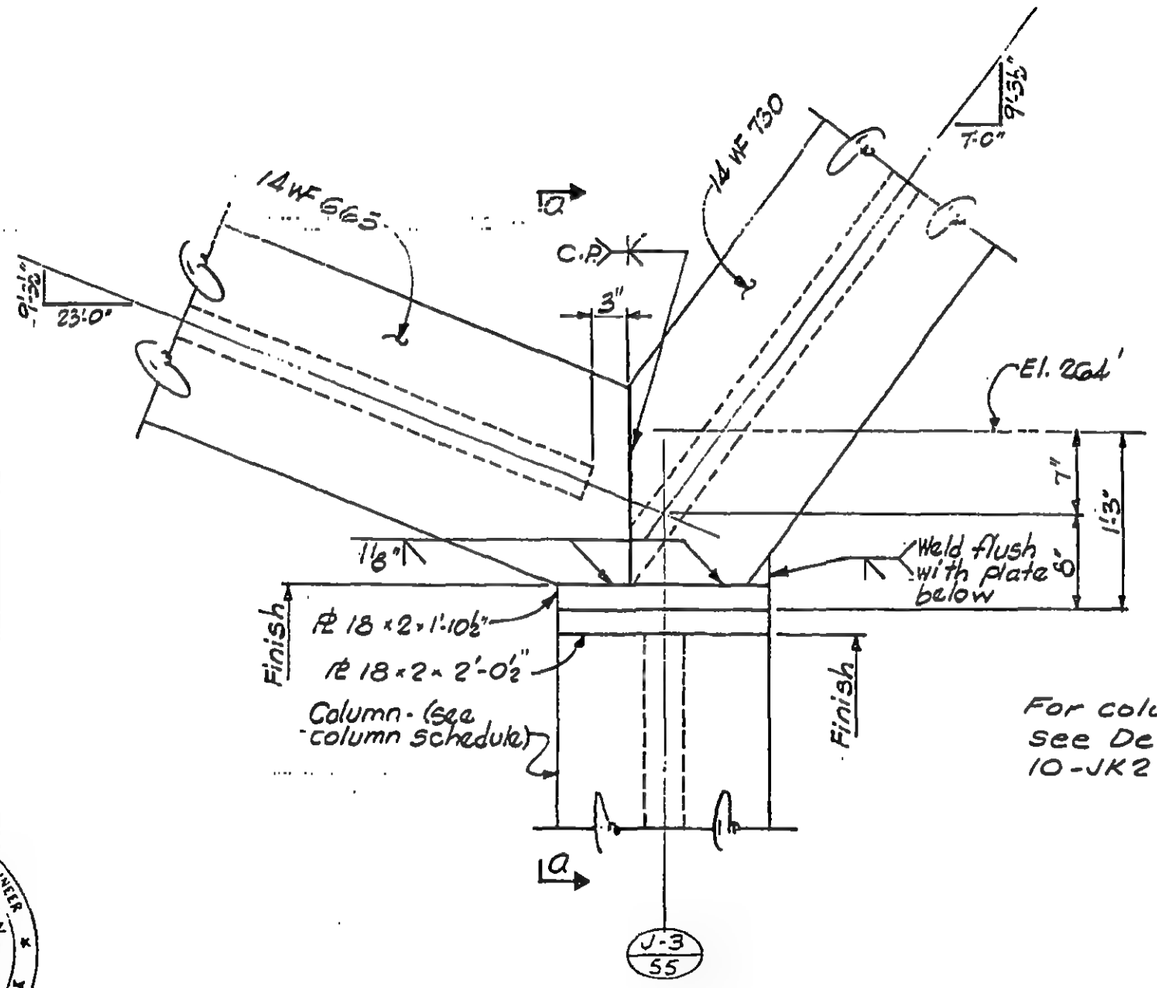
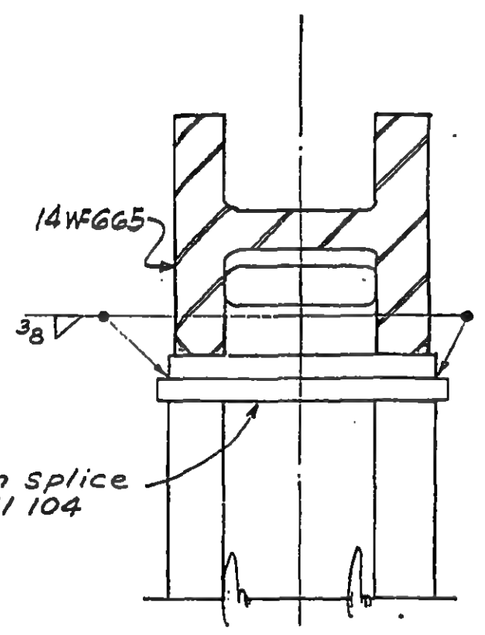
PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 16 | DATE 5-15-67

REVISIONS

4-5-68





Section a-a

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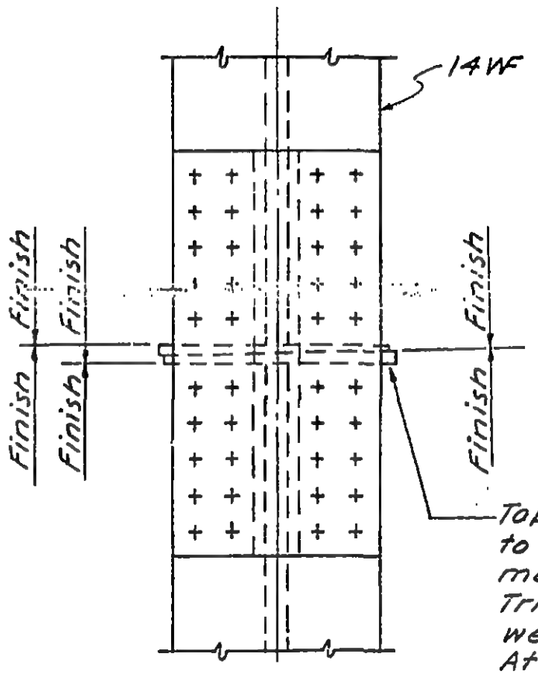
PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAILS | DATE 4-26-68

REVISIONS

NOTE 1

Trusses shall be shop assembled.
All joints provided with shim plates depend upon contact bearing, and shall bear evenly with respect to the centroid on the contact area. The contact area consists of the two flange areas of the members.
When assembled in the shop, at least 75 per cent of the entire contact area shall be in full bearing and the separation of any remaining portion shall not exceed 0.01 inch.
When re-assembled in the field, at least 65 per cent of the entire contact area shall be in full bearing and the separation of any remaining portion shall not exceed 0.02 inch.
Where the joining of the members in the field does not meet these tolerances, the erection contractor shall provide and install tapered shim plates to achieve full bearing as indicated on Detail A (this sheet).



Tapered shim plates to be cut from field measurements. Trim flush and tack weld in place. At contractor's option a single shim plate cut to fit the field measured profile may be provided.

Detail A

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PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 17 | DATE 5-15-67

REVISIONS

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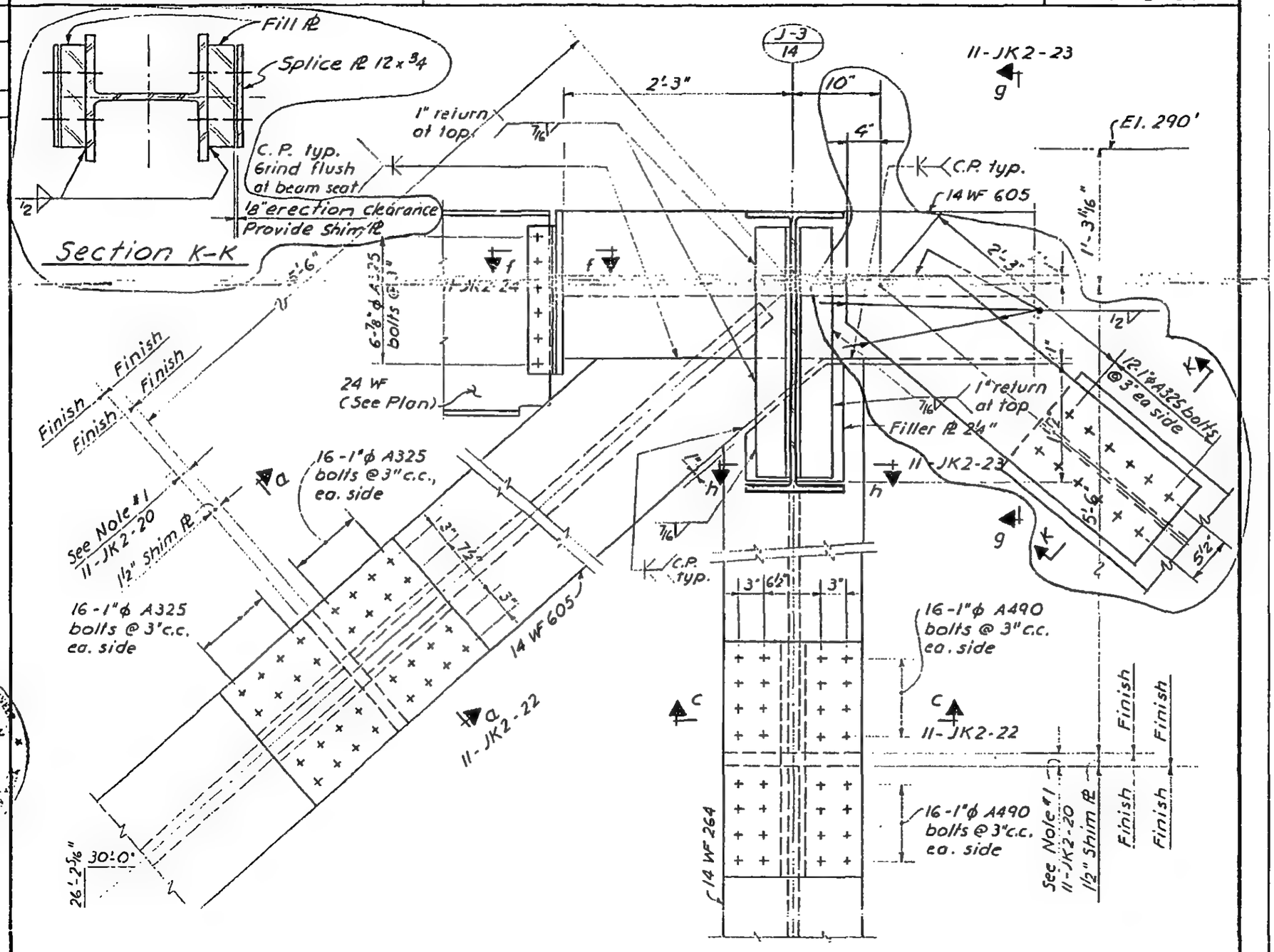

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PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAILS | DATE 5-15-67

REVISIONS

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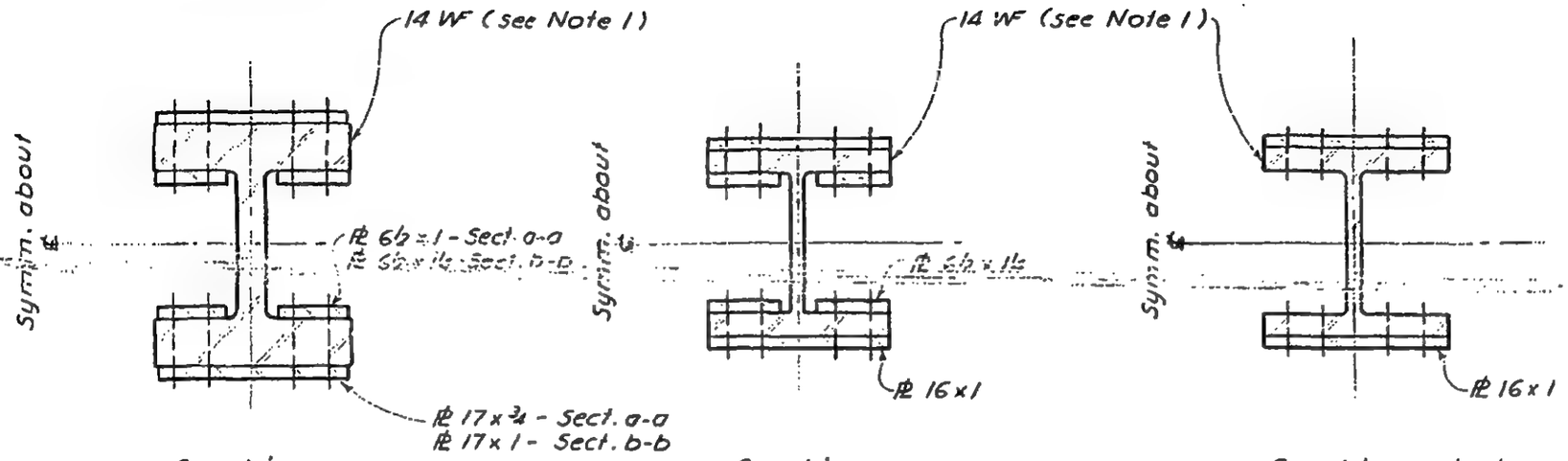

Section a-a

Section b-b

Section c-c

Section d-d

Note:

1. Bolt holes thru 14 WF may be ⅛" larger than nominal bolt size.

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REVISIONS

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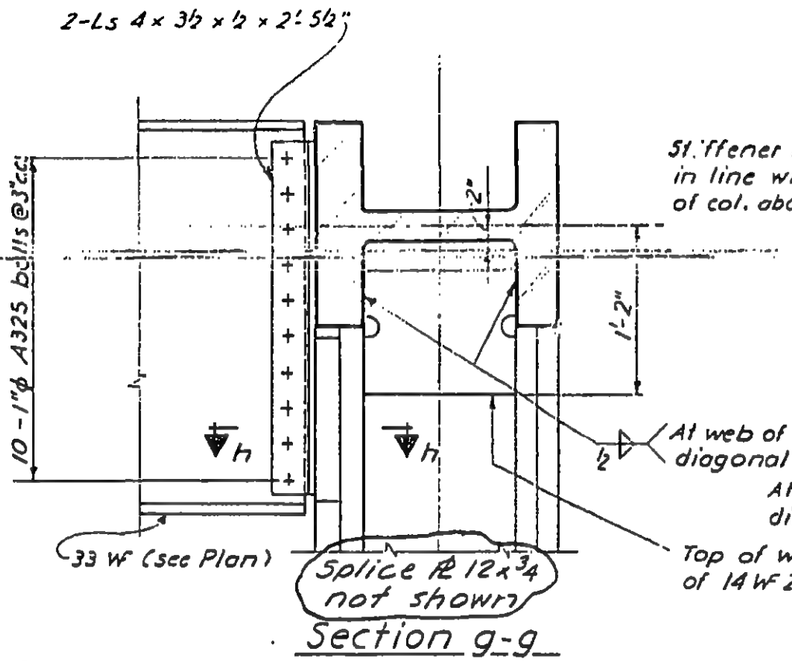
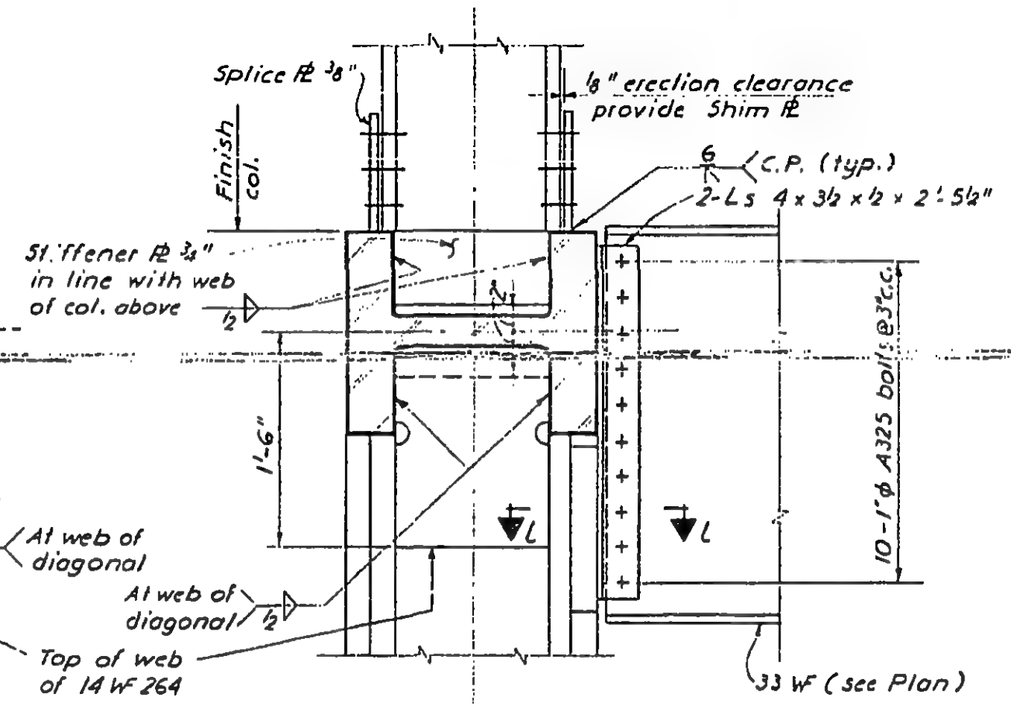
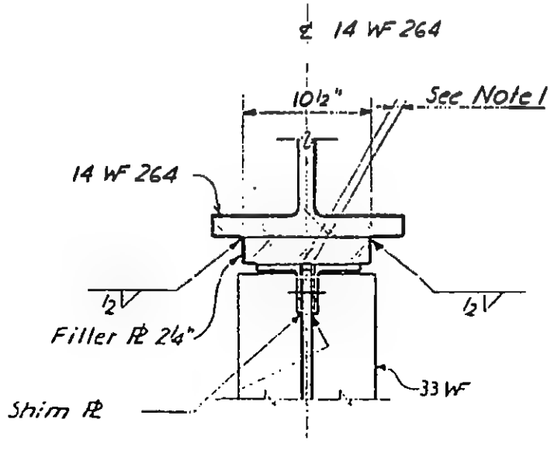


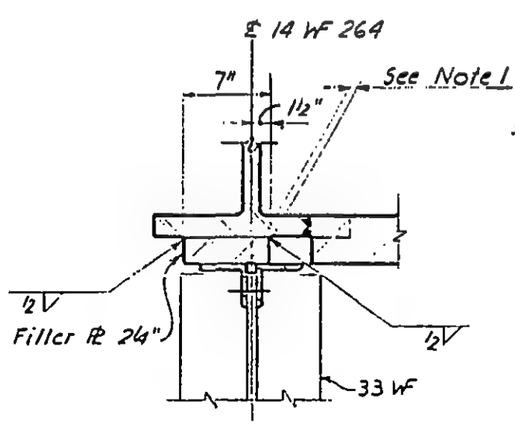
Section g-g



Section k-k



Section h-h



Section l-l

Note 1:
Erection clearance each side of beam web should not be more than 1/16". Provide shim between beam web and L's if required to insure surface contact for H.S. bolts.

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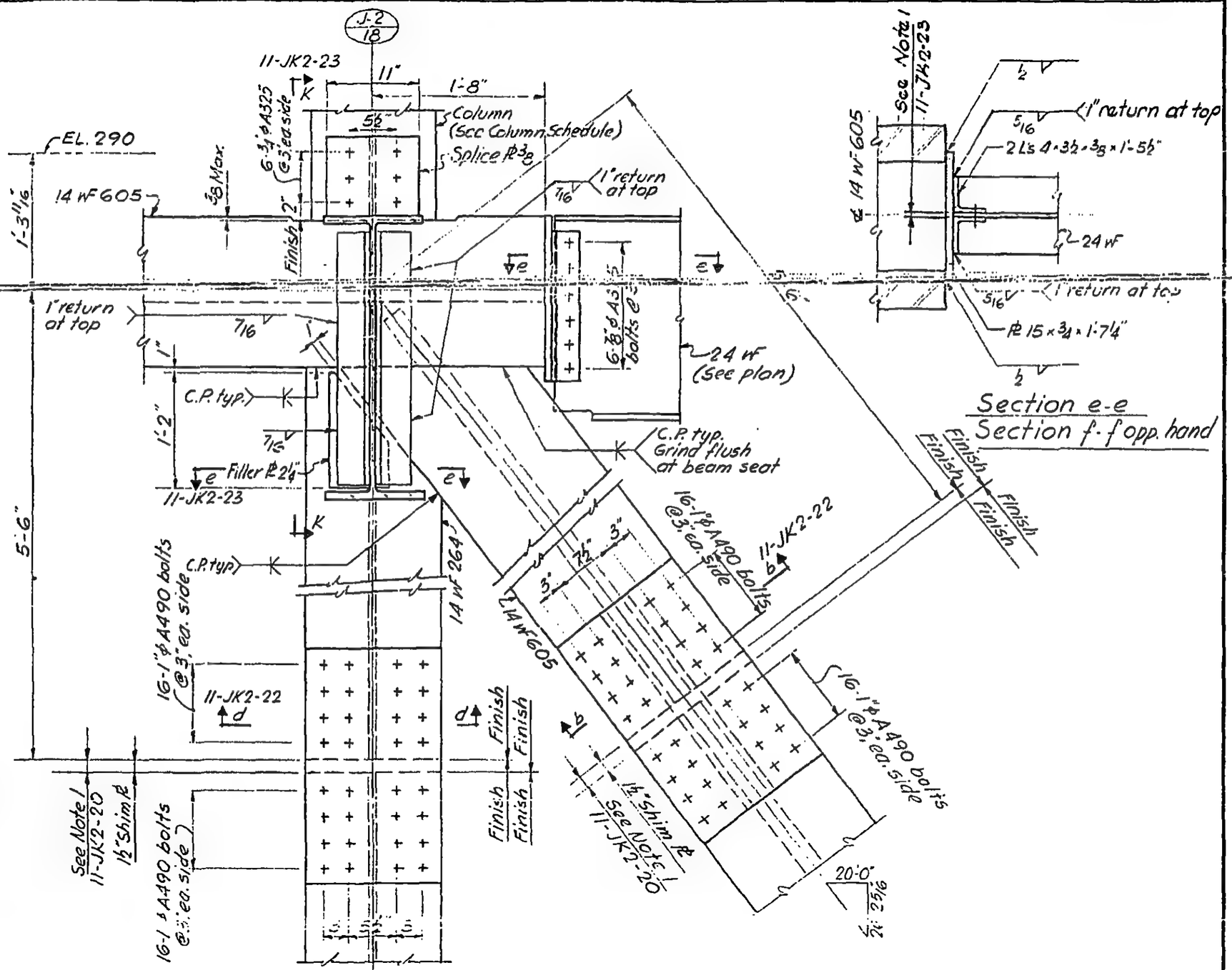
PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 18 | DATE 5-15-67

REVISIONS

5-1-68



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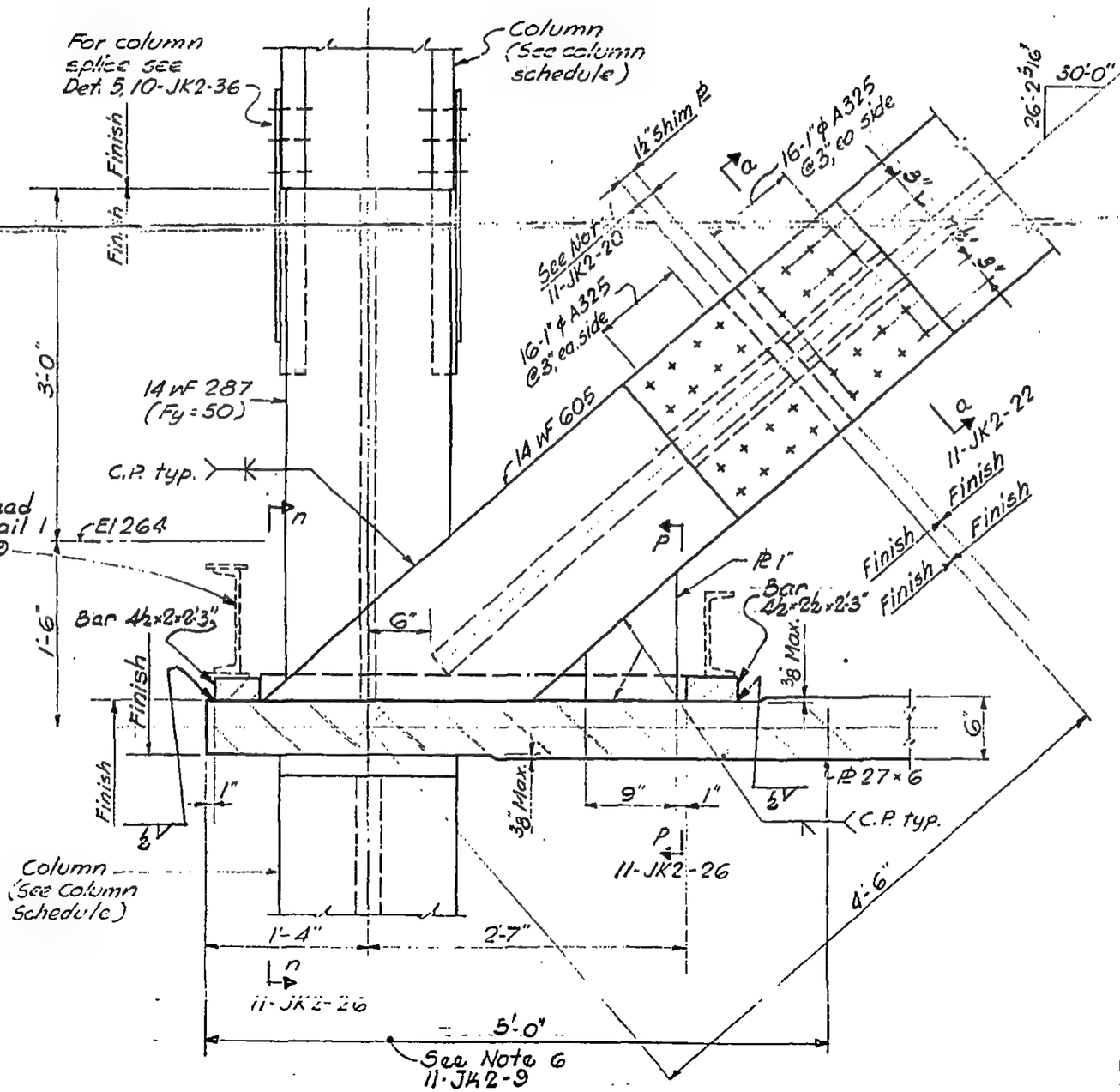
PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 19 | DATE 5-15-67

REVISIONS

5-1-68



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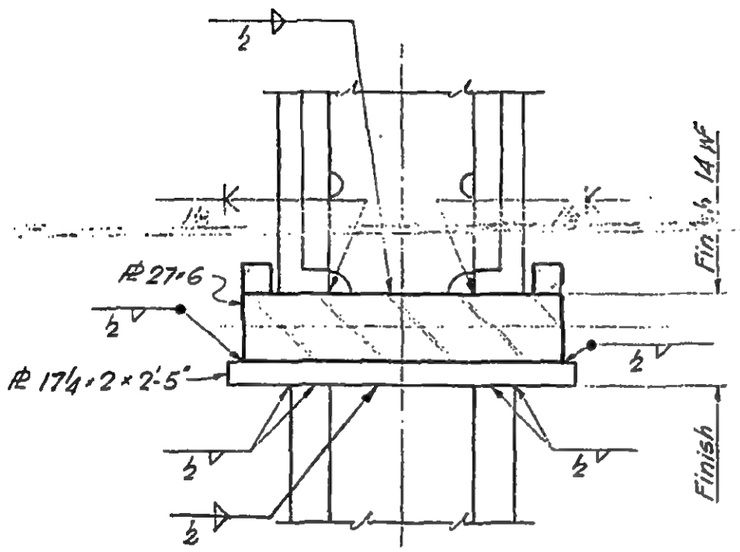
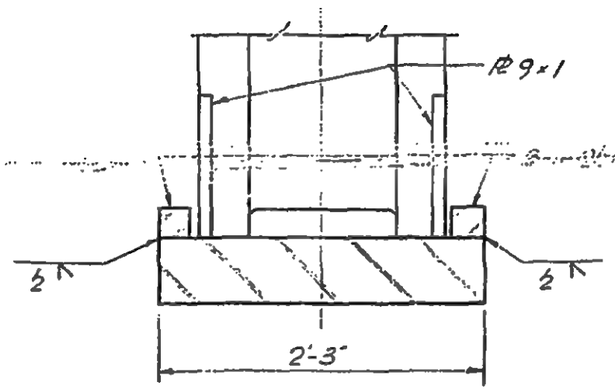
REVISIONS

5-1-68



Section n-n



Section p-p

LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
THE STATE OF NEW YORK

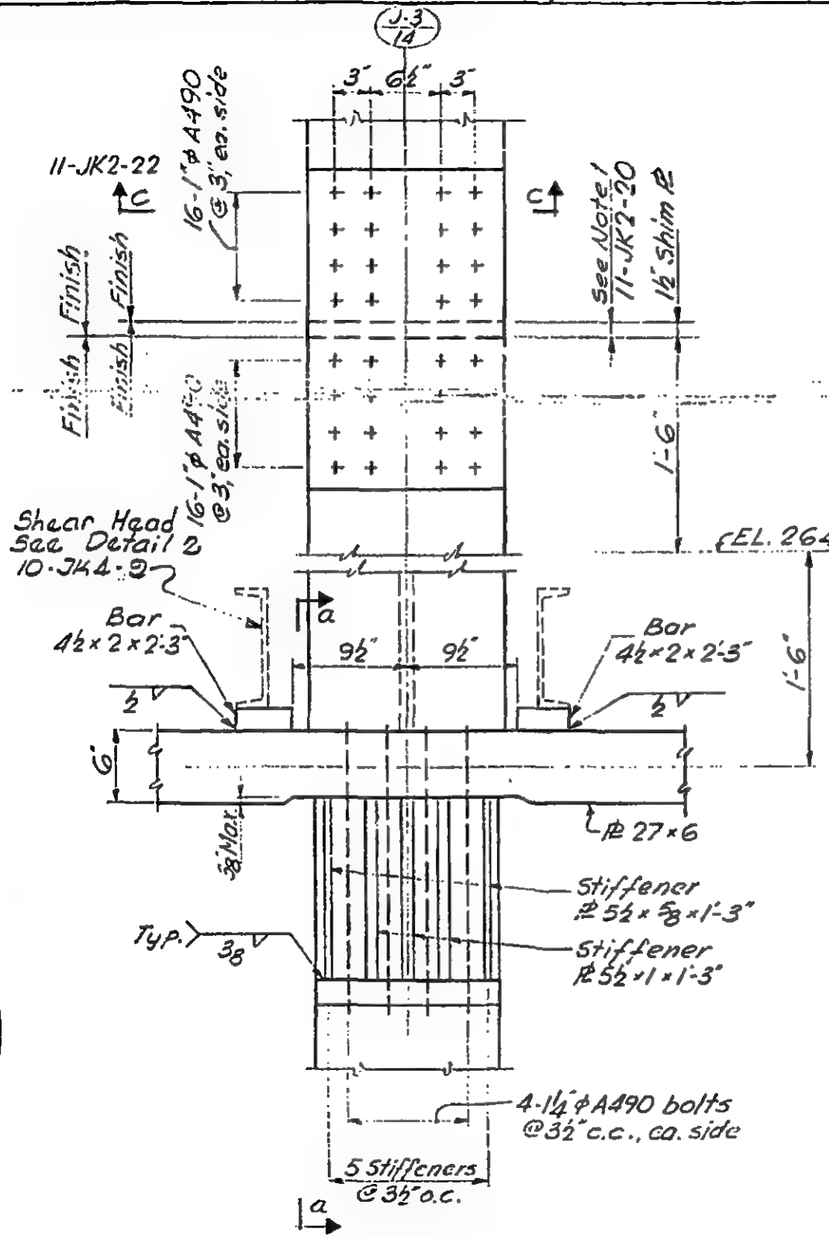
11-JK2-26

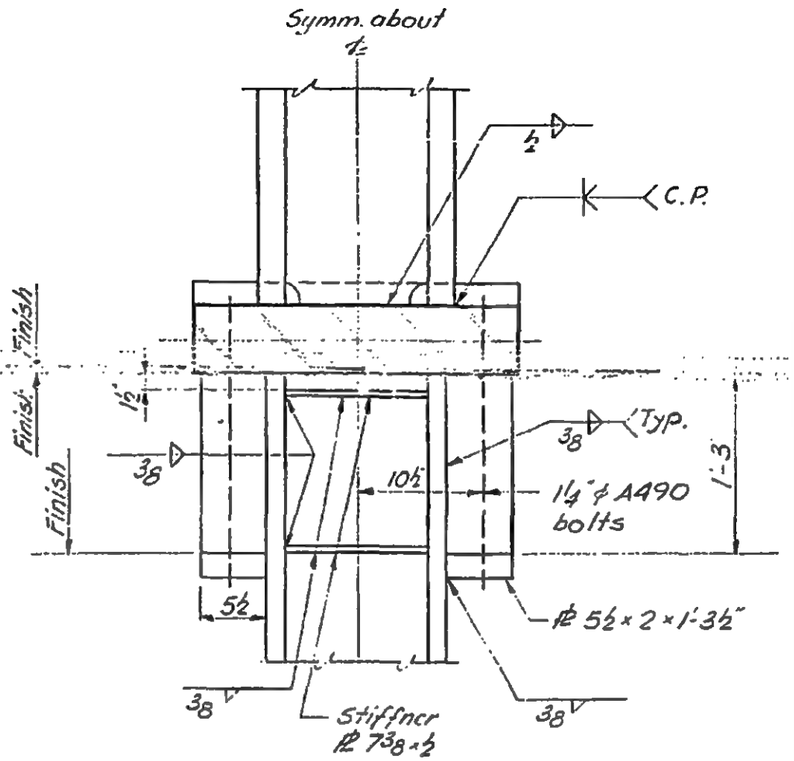
SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 20 | DATE 5-15-67

REVISIONS

5-1-68





Section a-a

LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
UNIVERSITY OF THE STATE OF NEW YORK

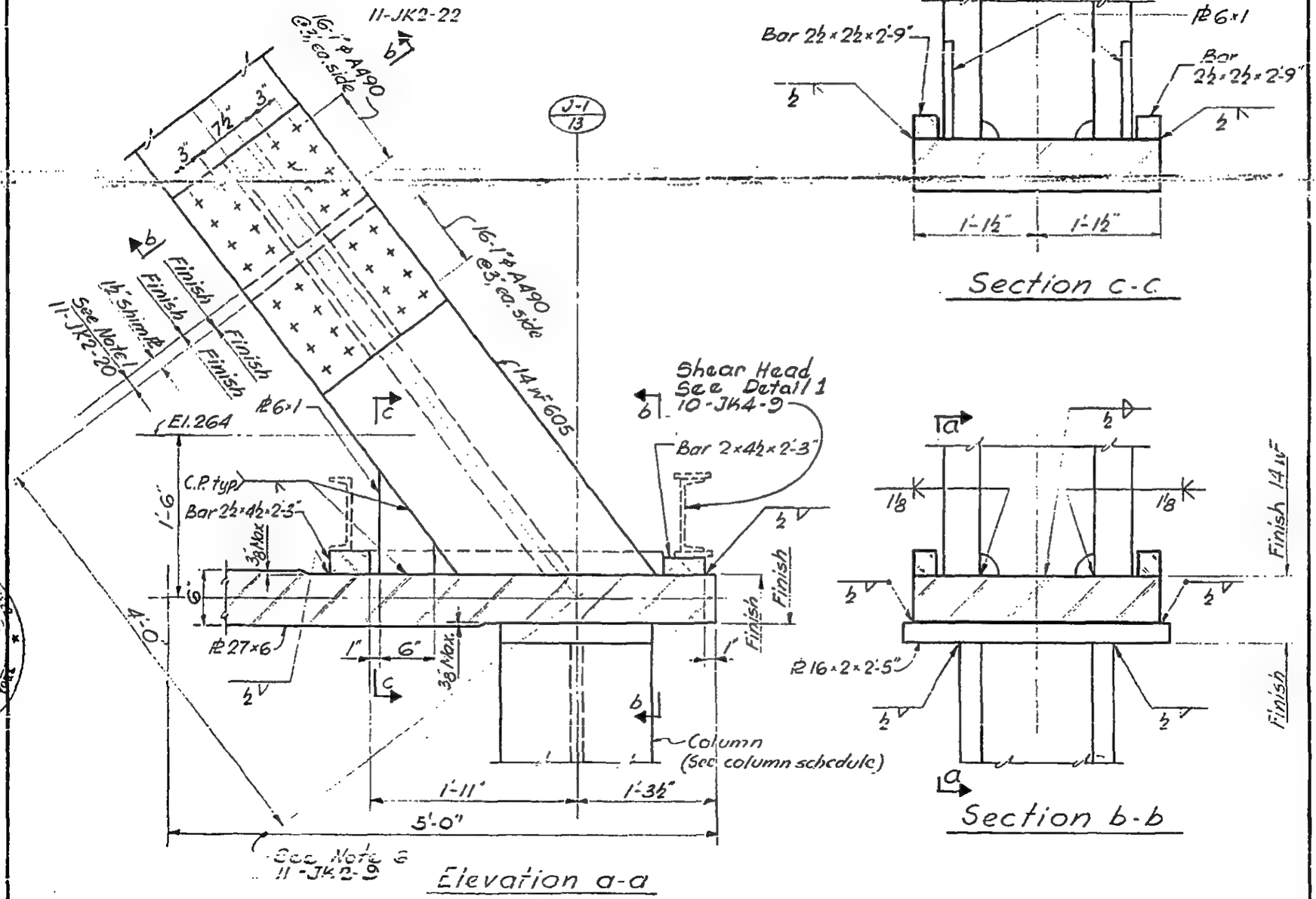
11-JK2-27

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 21 | DATE 5-15-67

REVISIONS

5-1-68



LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
UNIVERSITY OF THE STATE OF NEW YORK

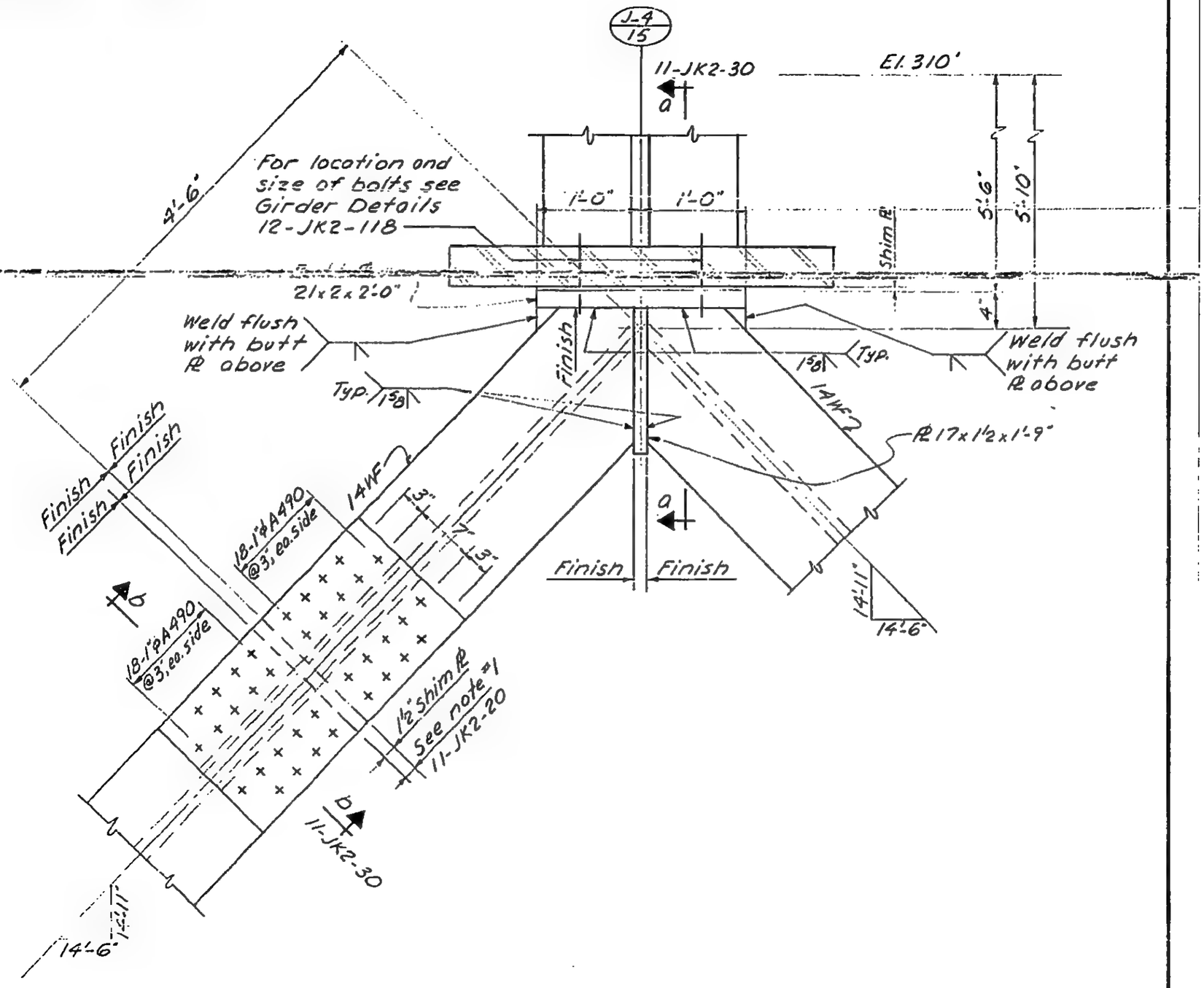
11-JK2-28

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 22 | DATE 5-15-67

REVISIONS

5-1-68



LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
UNIVERSITY OF THE STATE OF NEW YORK

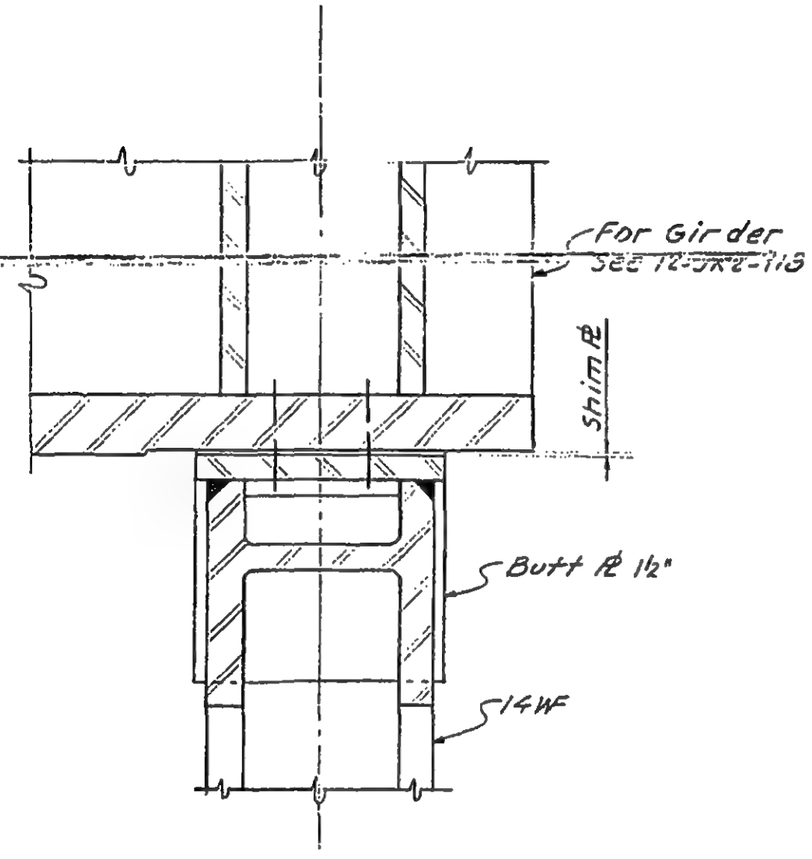
11-JK2-29

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

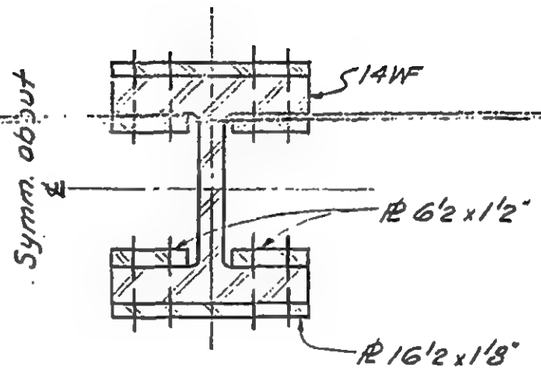
PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAILS | DATE 5-15-67

REVISIONS

5-1-68



Section a-a



Section b-b

Note:
Bolt holes thru 14WF may be ⅛" larger than nominal bolt size.

LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No.
UNIVERSITY OF THE STATE OF NEW YORK

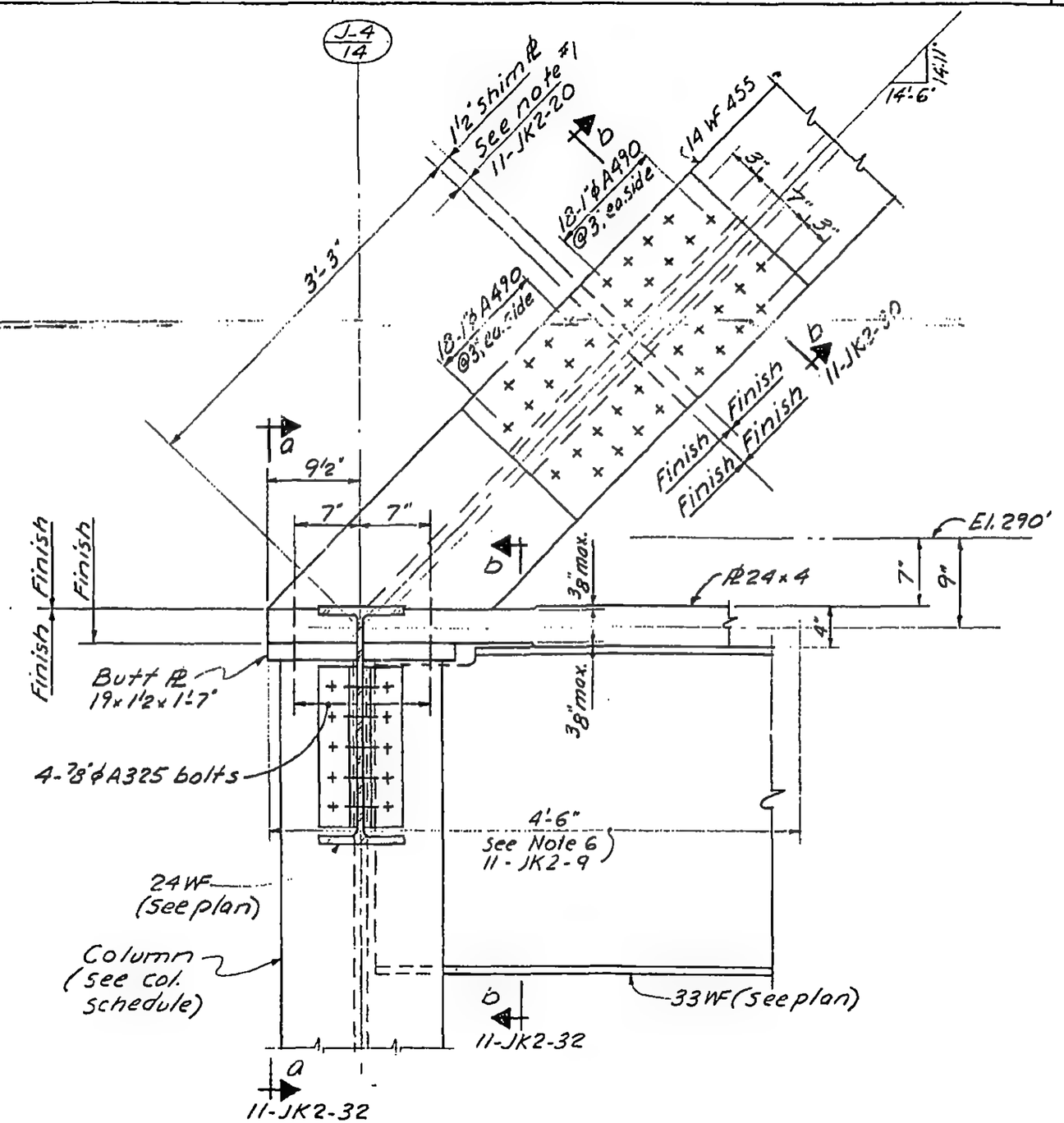
11-JK2-30

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 23 | DATE 5-15-67

REVISIONS

5-1-68



LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34810
STATE OF NEW YORK

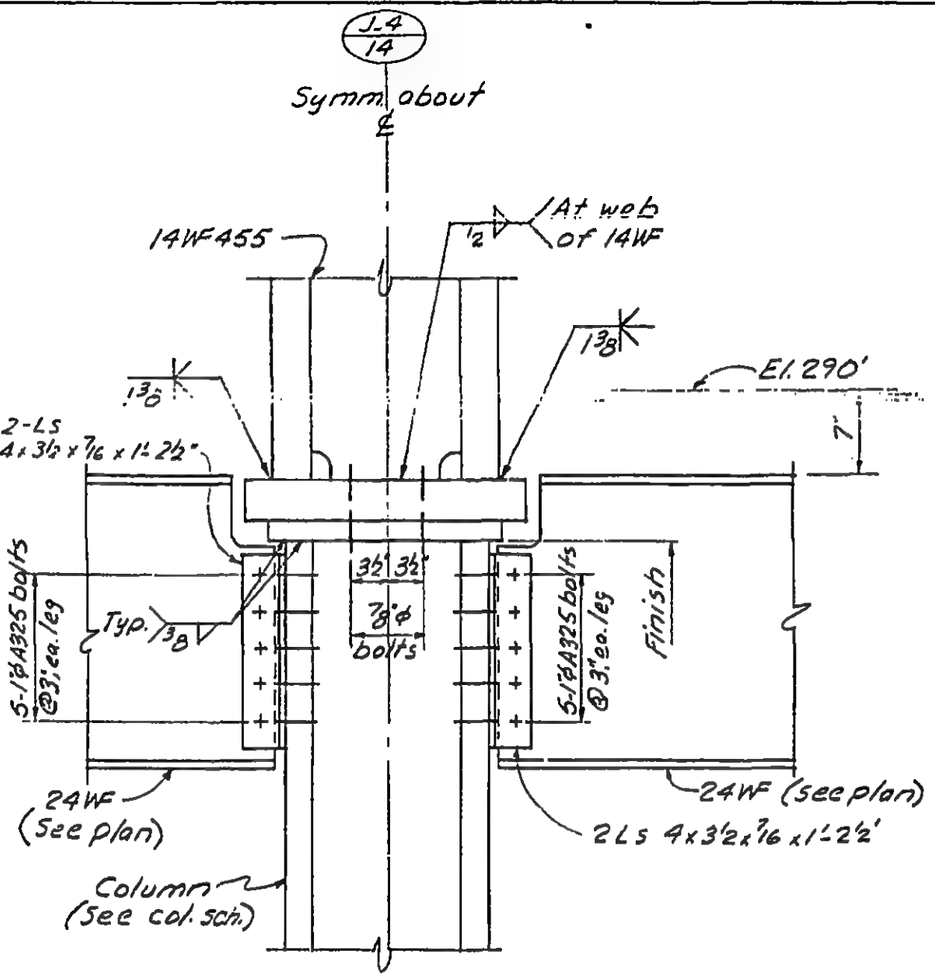
11-JK2-31

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

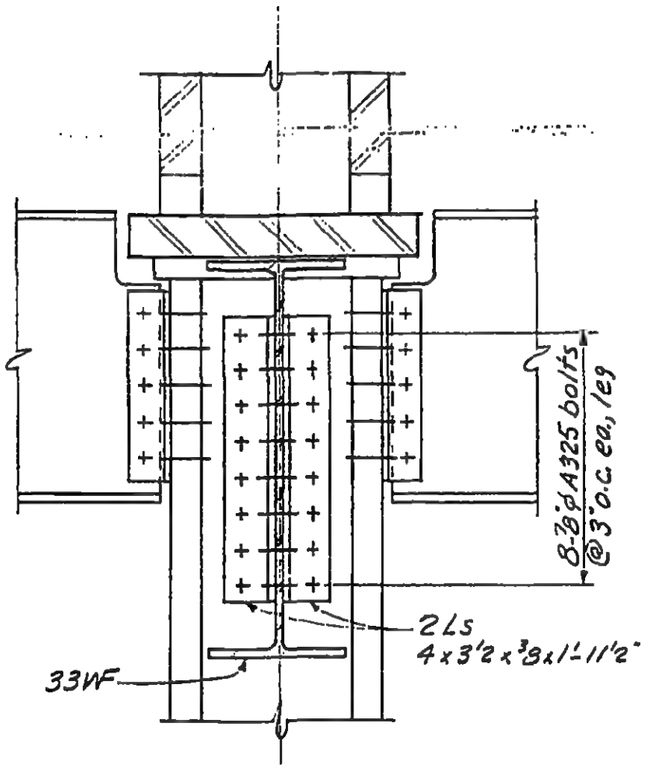
PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAILS | DATE 5-15-67

REVISIONS

5-1-68



Section a-a



Section b-b

LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 3430
UNIVERSITY OF THE STATE

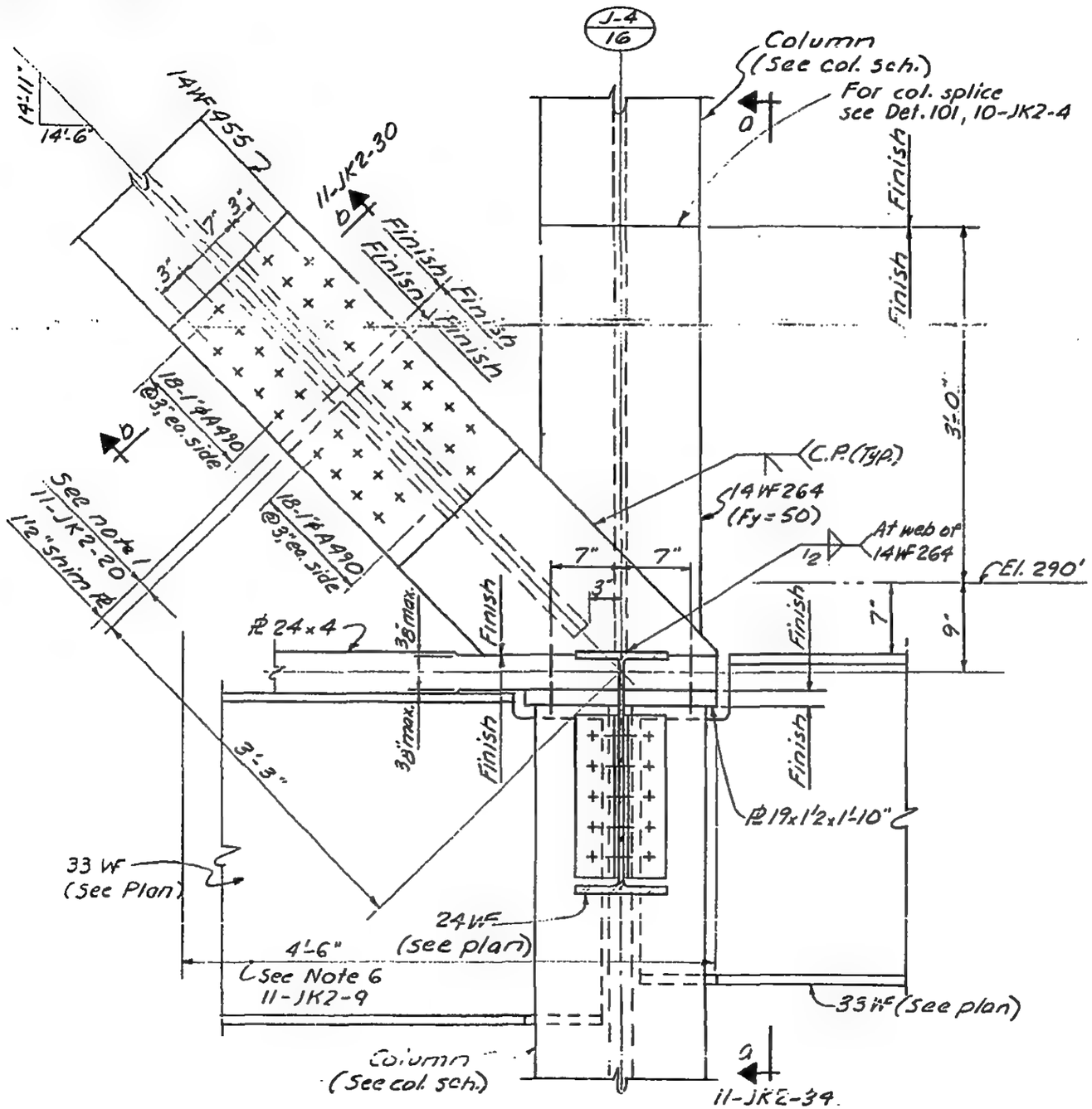
11-JK2-32

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 24 | DATE 5-15-67

REVISIONS

5-1-68



LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34340
UNIVERSITY OF THE STATE OF NEW YORK

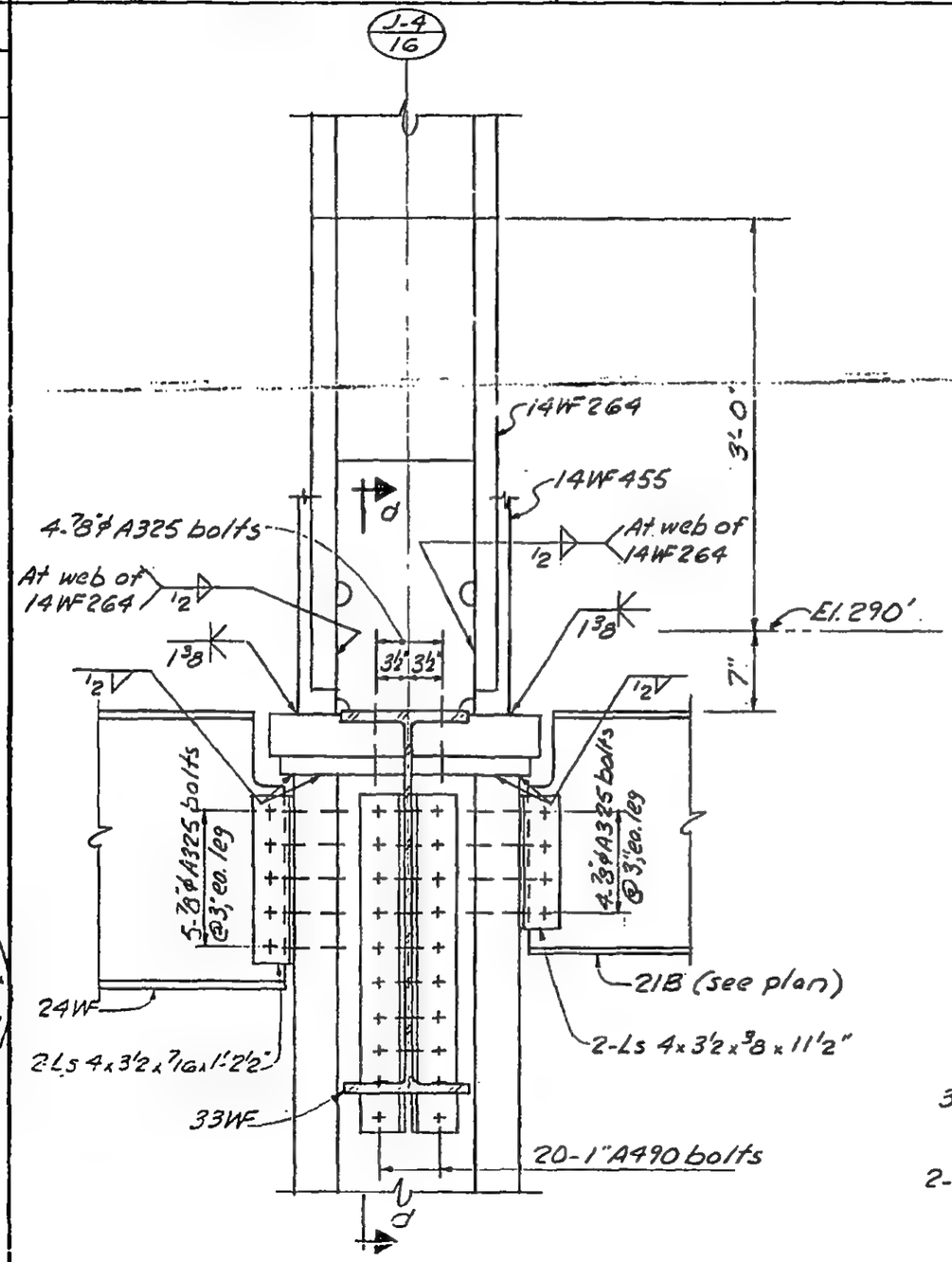
11-JK2-33

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON · Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAILS | DATE 5-15-67

REVISIONS

5-1-68



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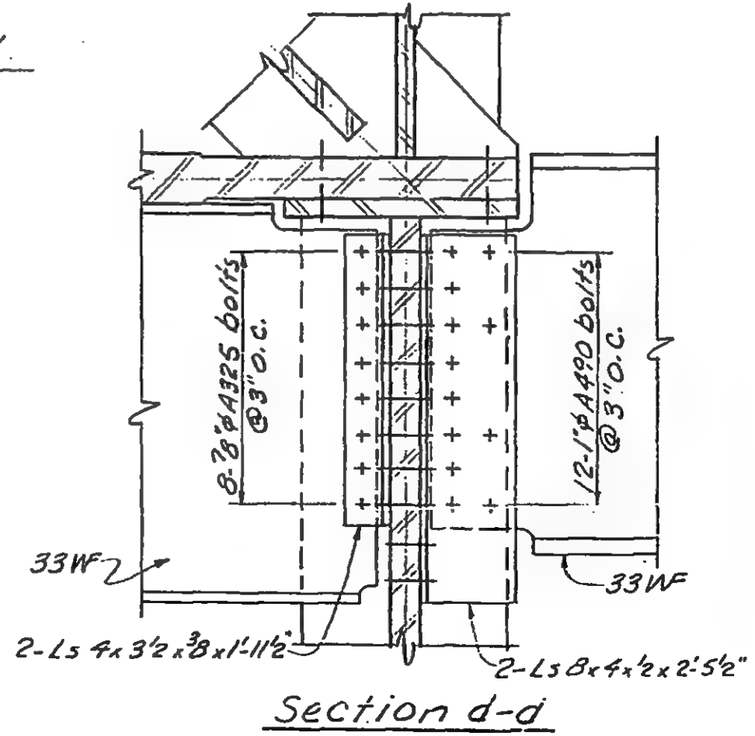


Section d-d

11-JK2-34

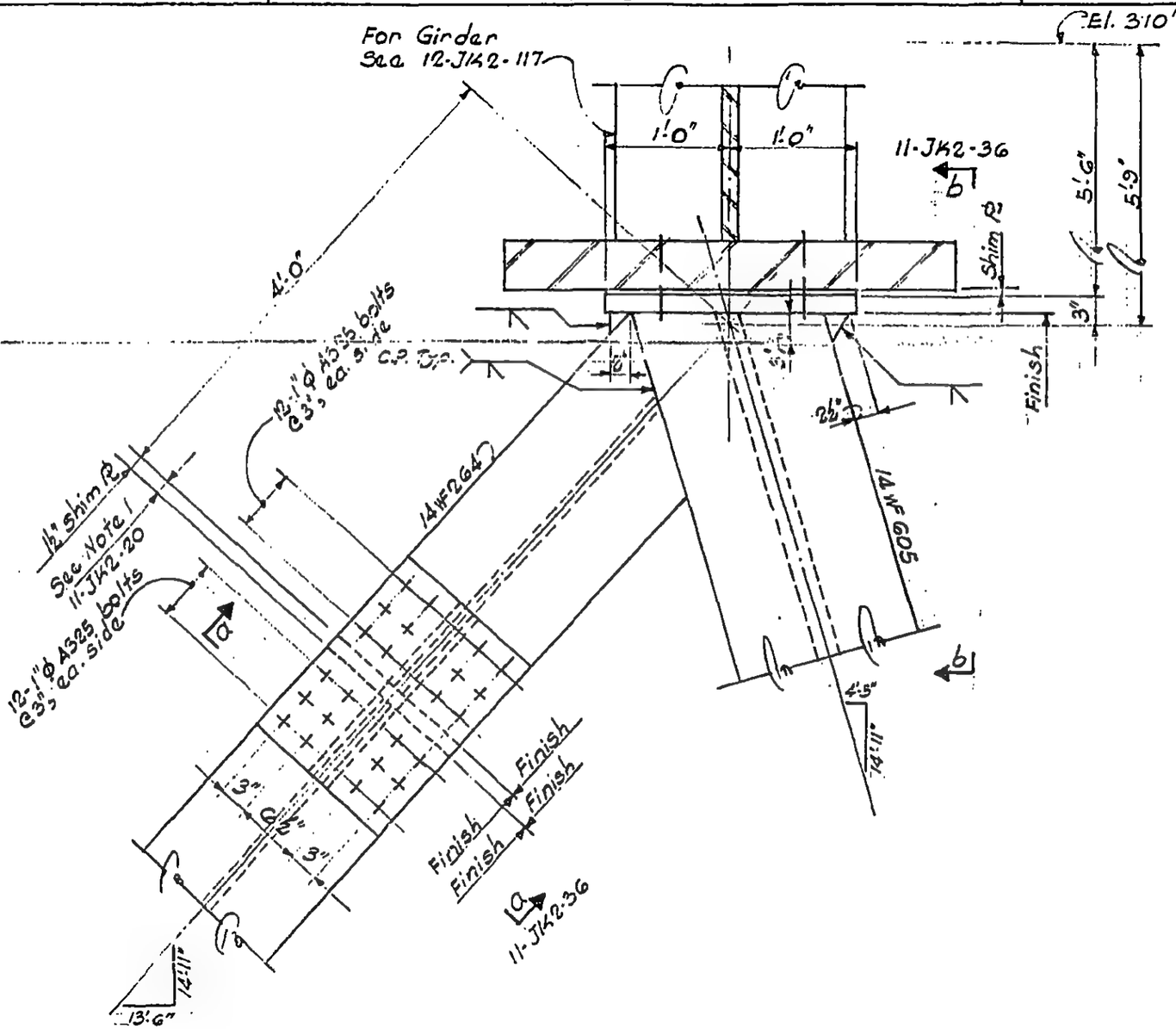
LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
UNIVERSITY OF THE STATE OF NEW YORK

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT	TITLE	DATE
THE WORLD TRADE CENTER	TRUSS DETAIL 25	5-15-67

REVISIONS

5-1-68



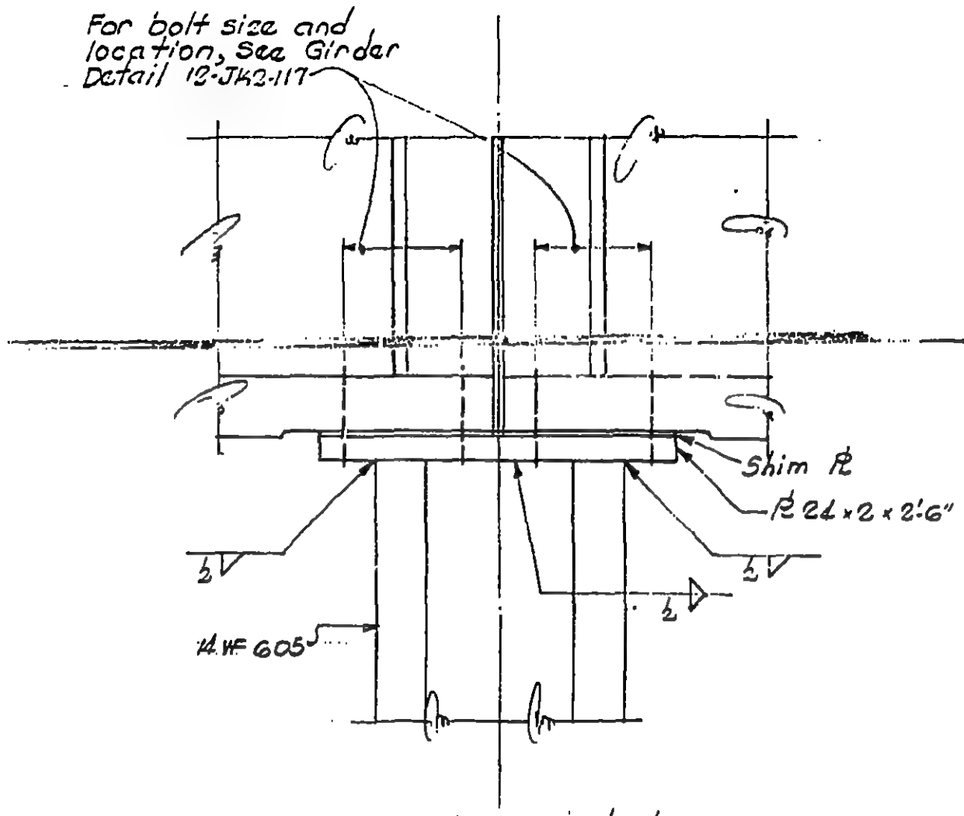
LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
UNIVERSITY OF THE STATE OF NEW YORK

11-JK2-35

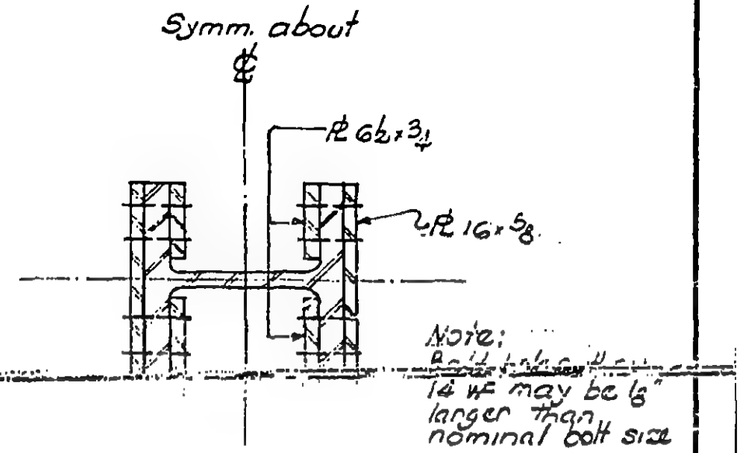
SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL | DATE 5-1-68

REVISIONS



Section b-b



Section a-a

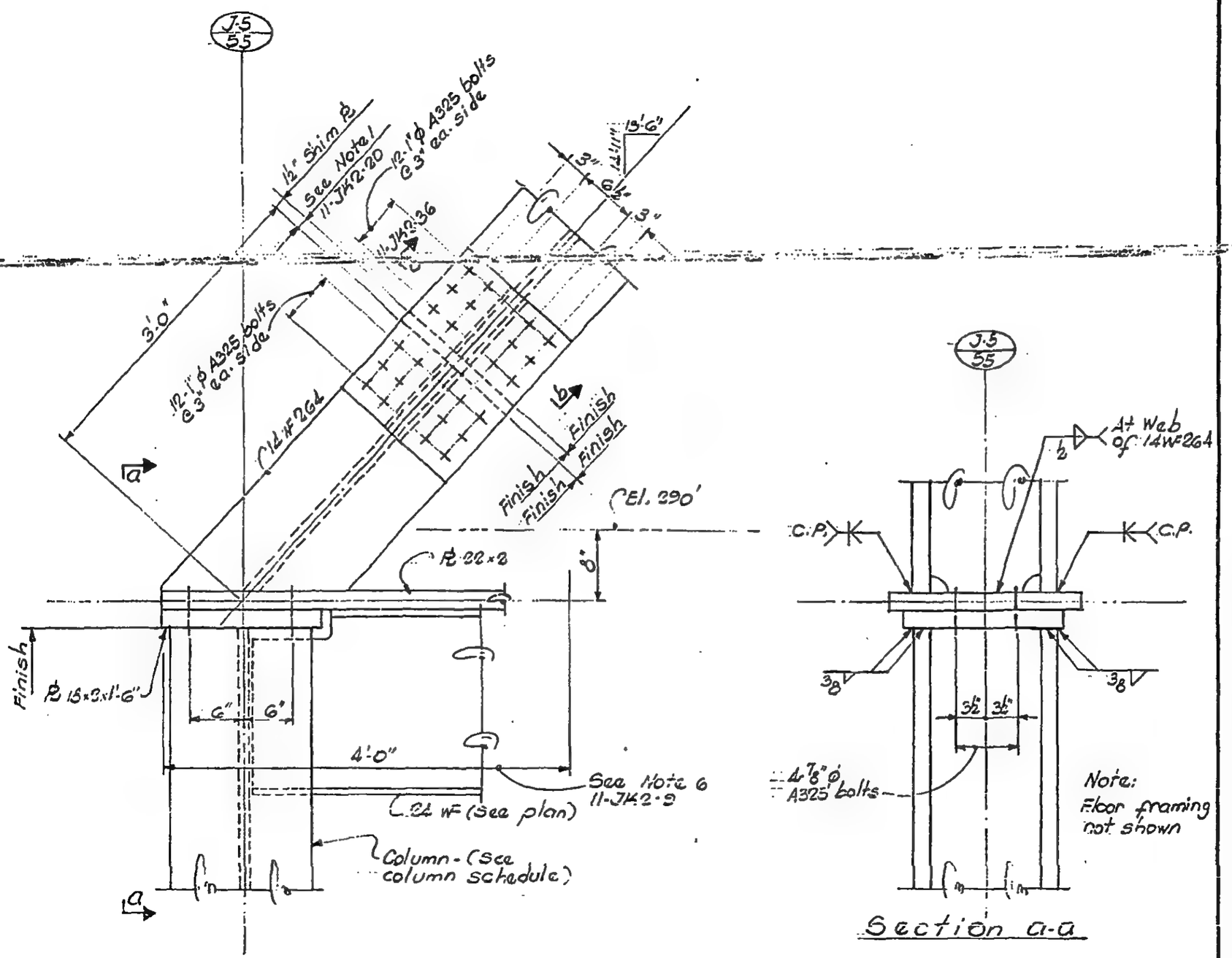
LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 84360
REGISTERED TO PRACTICE IN THE STATE OF NEW YORK

11-JK2-36

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 26 | DATE 5-1-68

REVISIONS



Section a-a

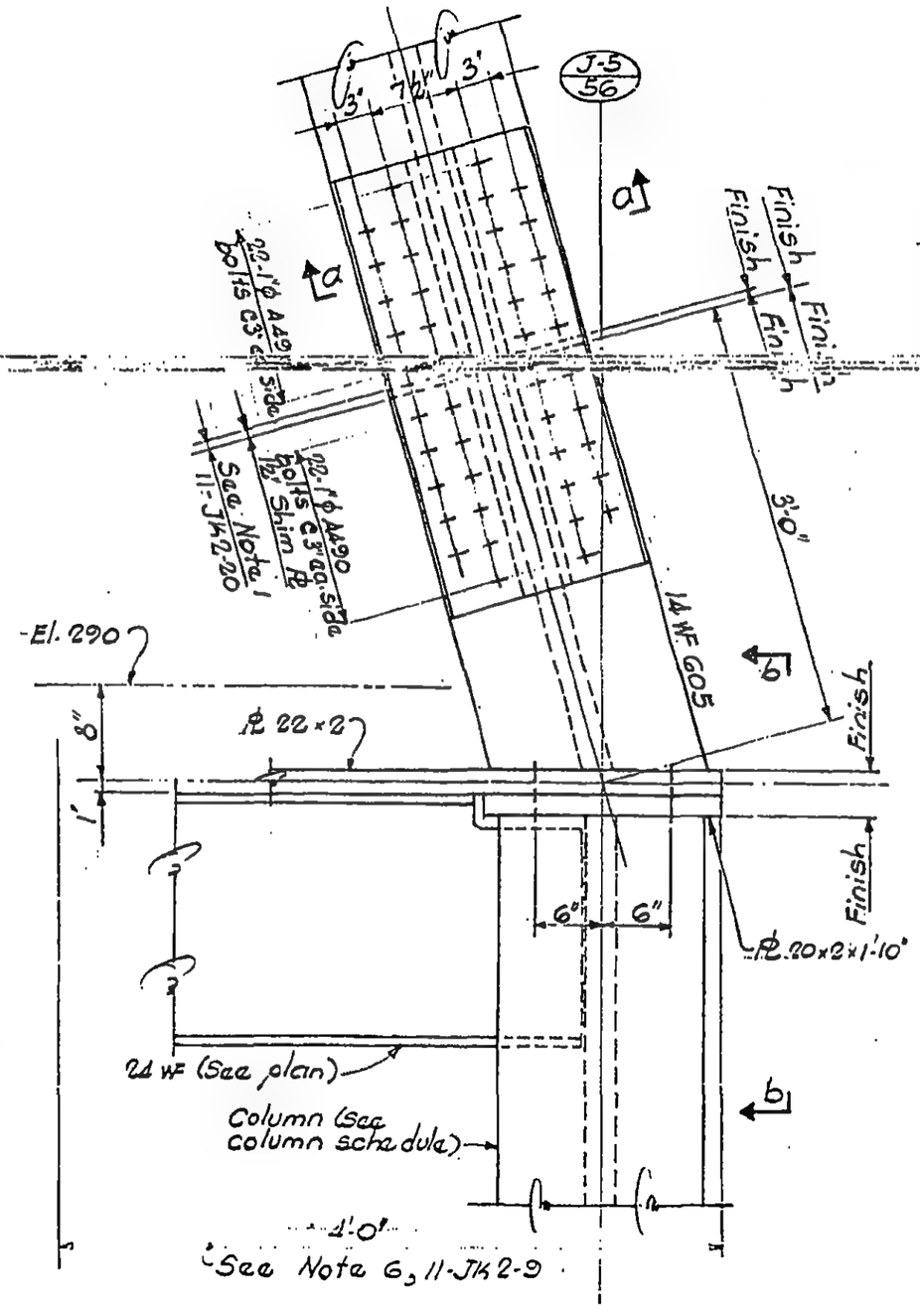
11-JK2-37

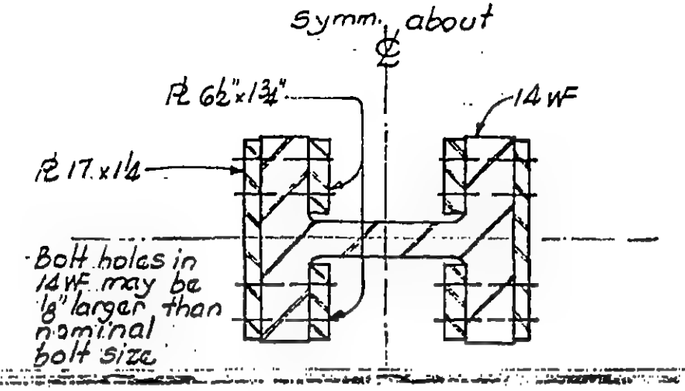
LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 84360
UNIVERSITY OF THE STATE OF NEW YORK

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

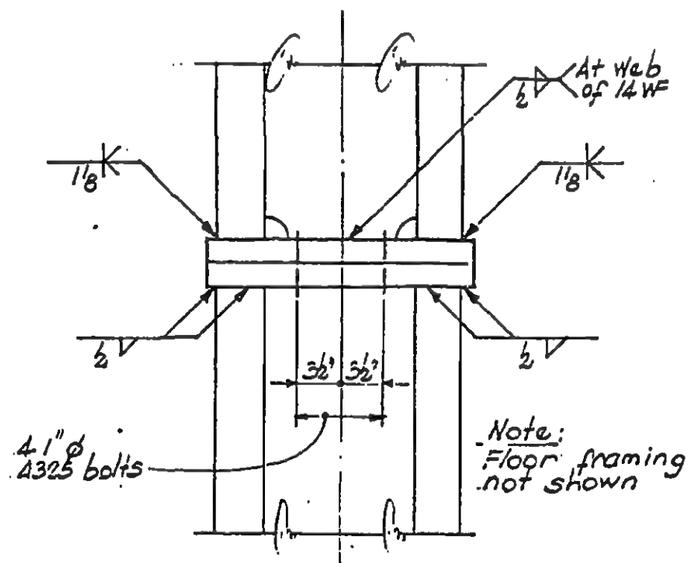
PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 27 | DATE 5-1-68

REVISIONS





Section a-a



Section b-b

LICENSED PROFESSIONAL ENGINEER LESLIE E. ROBERTSON No. 34360 UNIVERSITY OF THE STATE OF NEW YORK

11-JK2-38

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 28 | DATE 5-1-68

REVISIONS

J-6 / 12

Column (See column schedule

For Column splice see Detail 6, 10-JK2-36

3'-0"

El. 272

a

14 WF 342 (Fy=50)

2'-0"

10"

3" max.

1'-3½"

Finish

Finish

6"

3'

PL 30 x 6

4'-6"

See Note 6 11-JK2-9

14 WF 665

C.P.

14 WF 53

6-1" ϕ A490 @ 3" ea. side

3'-0"

7'-0"

9½"

6-1" ϕ A490 @ 3" ea. side

Column (See column schedule)

5½"

a

For shear head see 10-JK4-8

Typ.

½

Typ.

½

C.P.

C.P.

At Web of 14 WF 53

½

Splice PL 8" x ⅞"

Section a-a

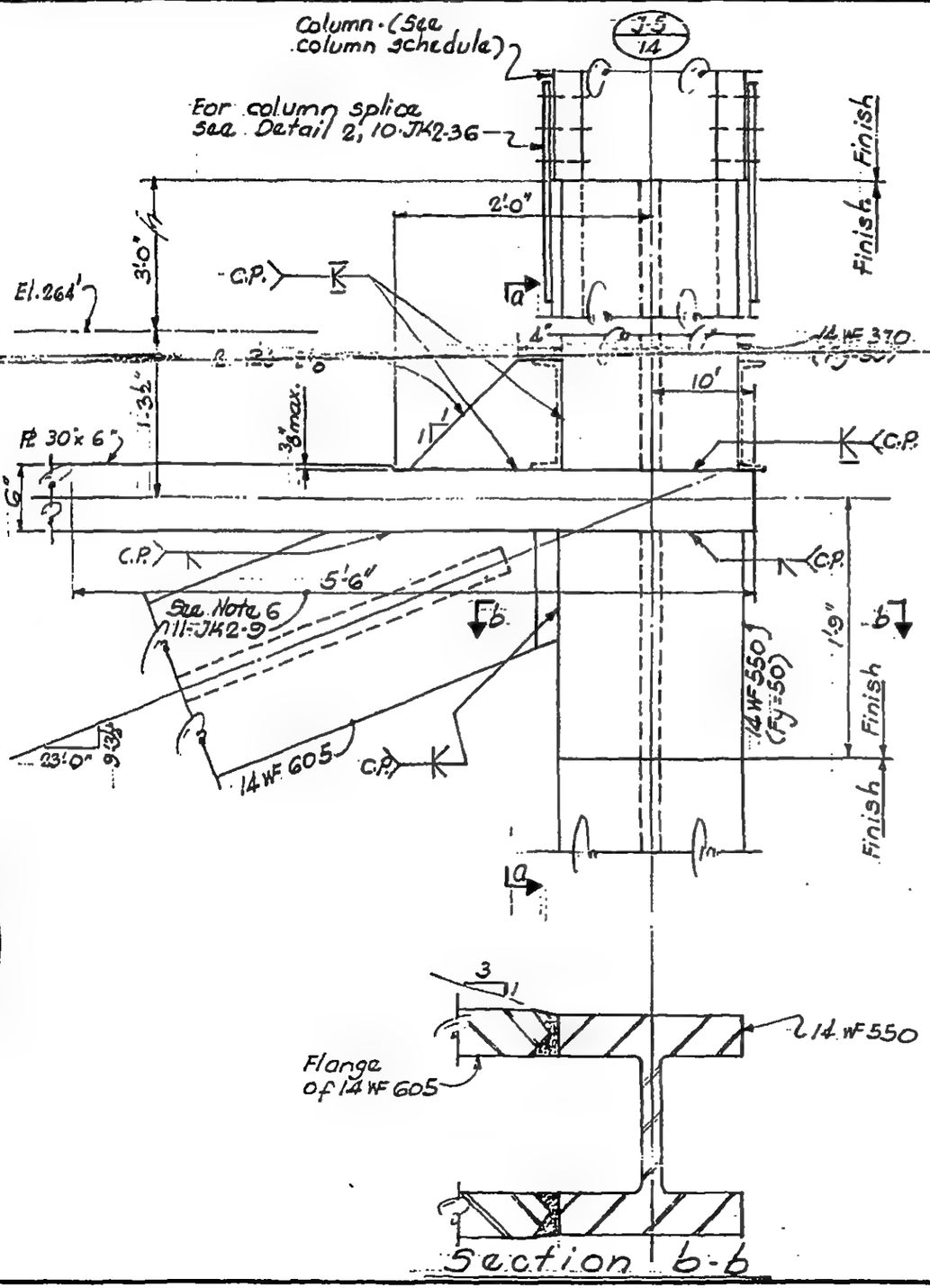
11-JK2-39

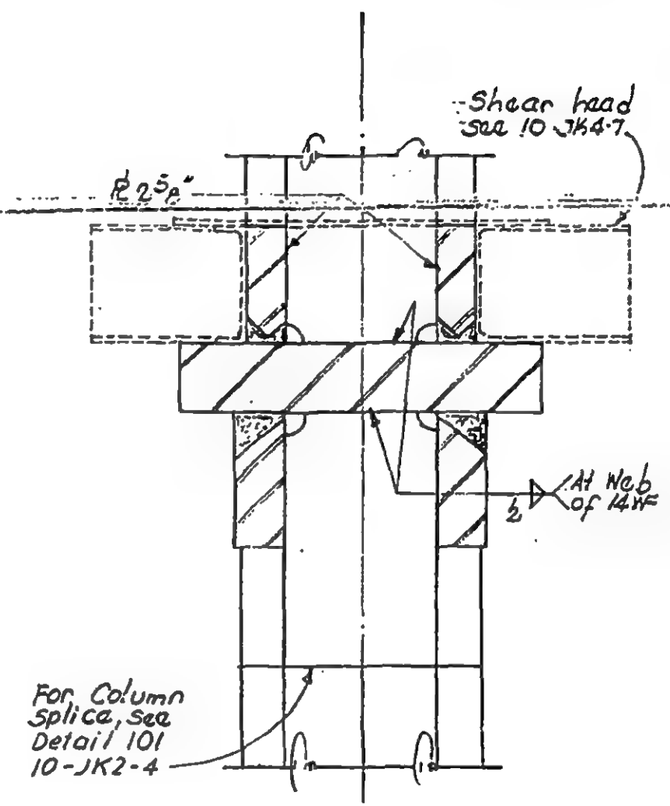
LICENSED PROFESSIONAL ENGINEER LESLIE E. ROBERTSON No. 34360 UNIVERSITY OF THE STATE OF NEW YORK

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 29 | DATE 5-1-68

REVISIONS





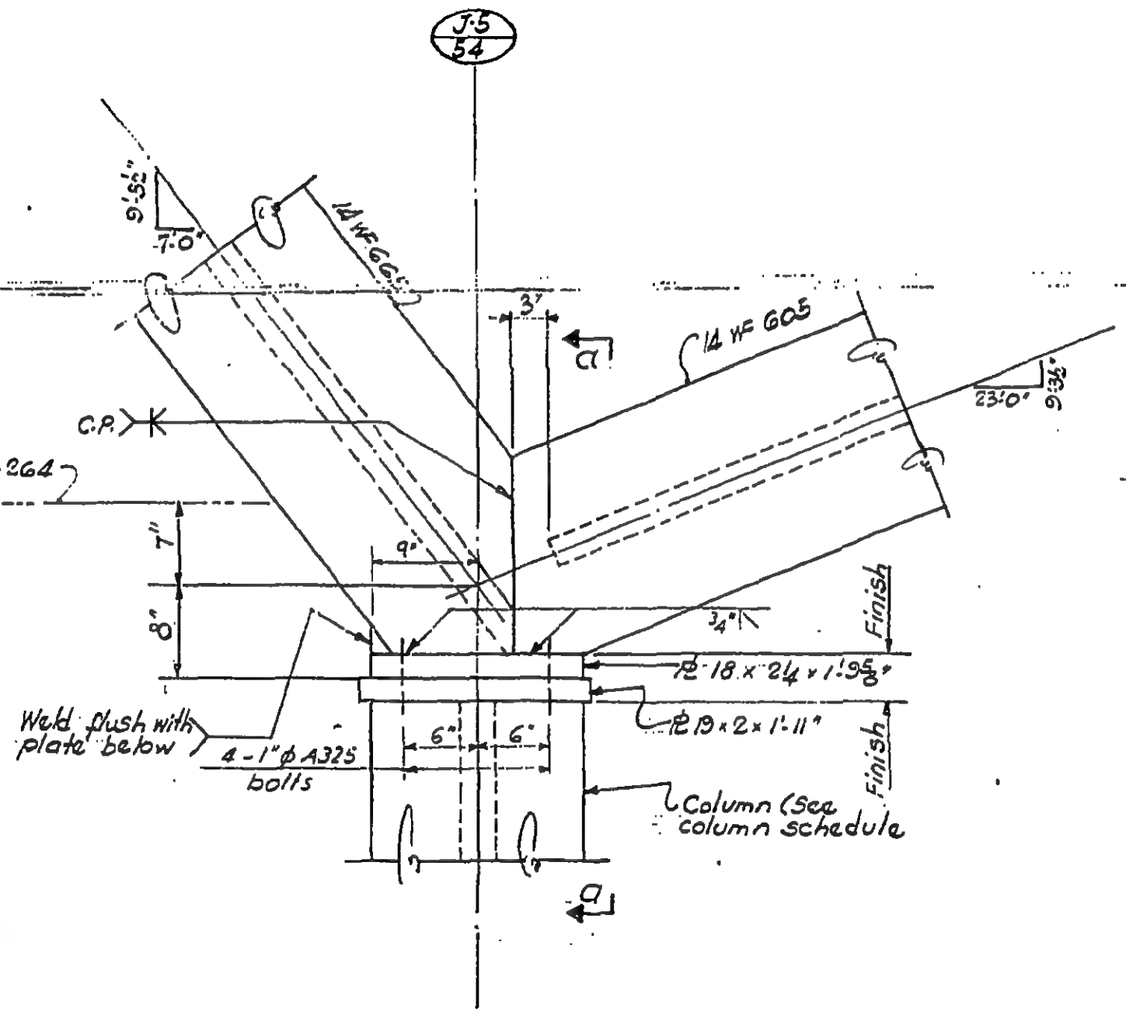
LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
UNIVERSITY OF THE STATE OF NEW YORK

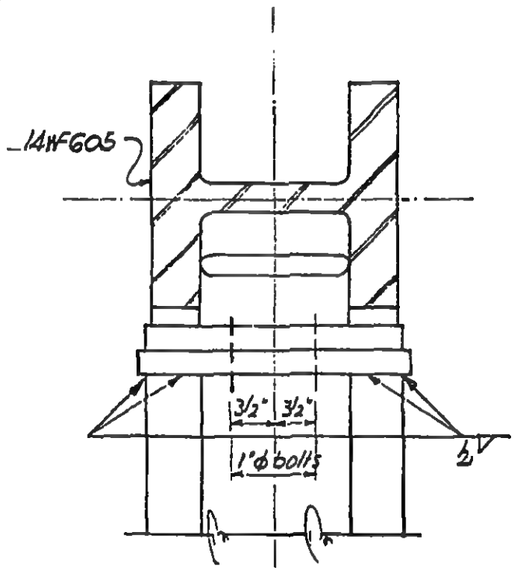
11-JK2-40

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 30 | DATE 5-1-68

REVISIONS





Section a-a

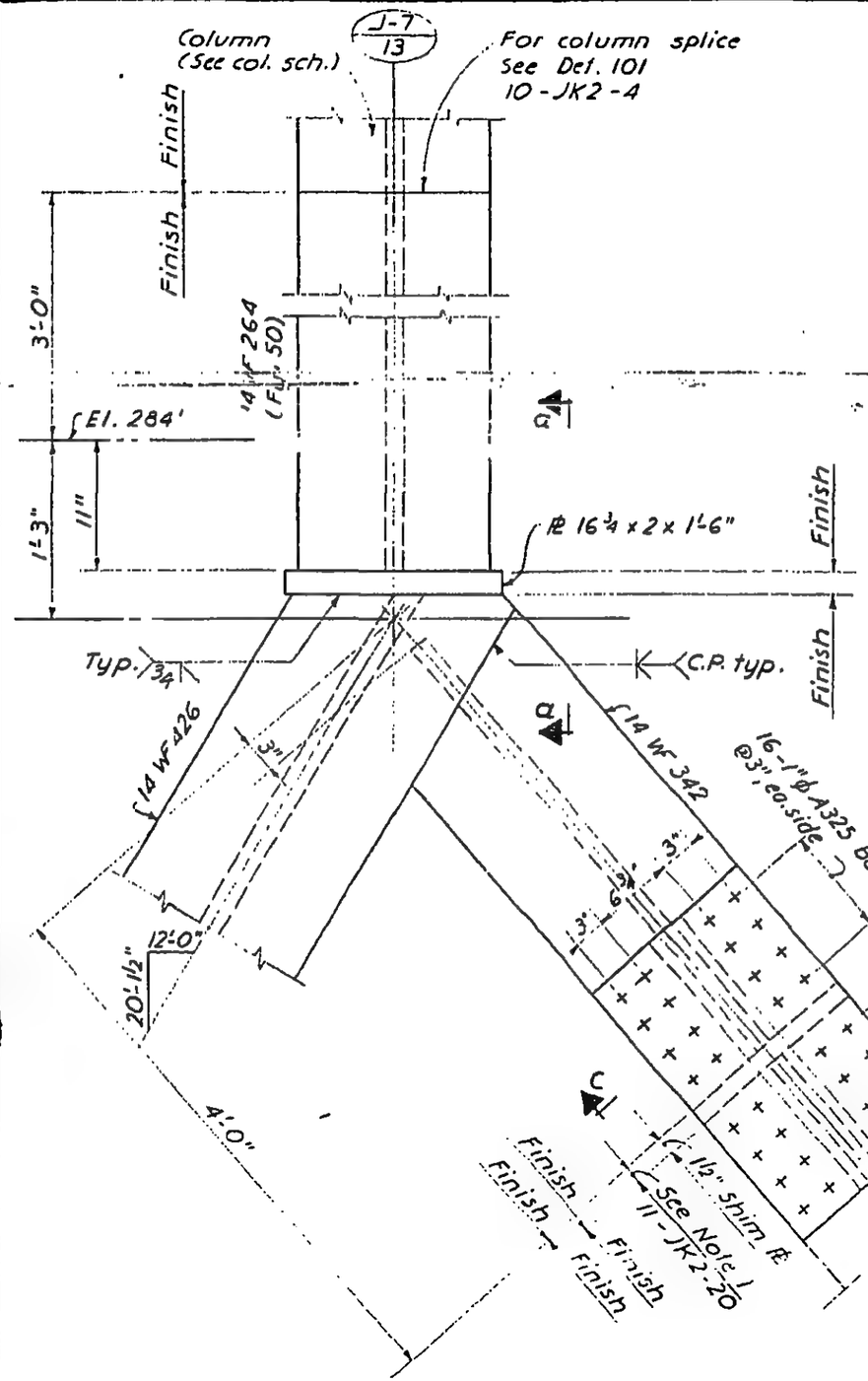
LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
UNIVERSITY OF THE STATE OF NEW YORK

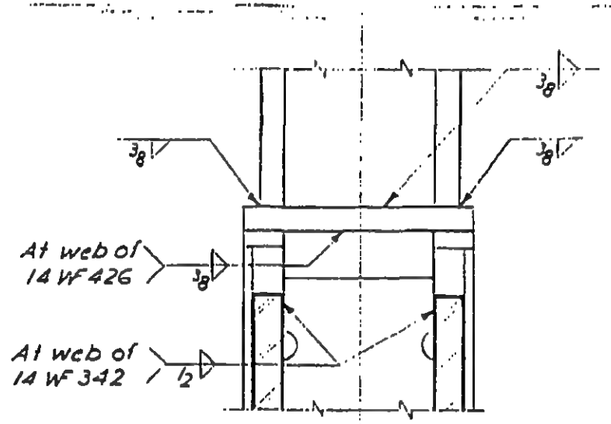
11-JA2-41

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Enginoors

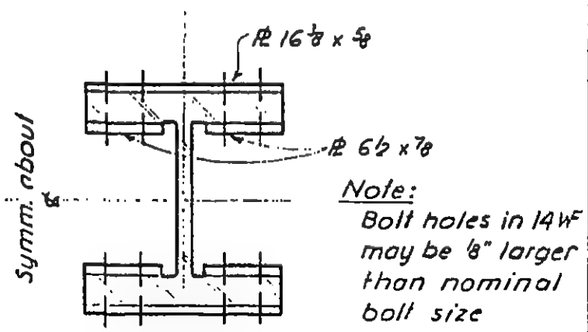
PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 31 | DATE 5-1-68

REVISIONS





Section a-a



Note:
Bolt holes in 14 WF may be ⅛" larger than nominal bolt size

Section c-c

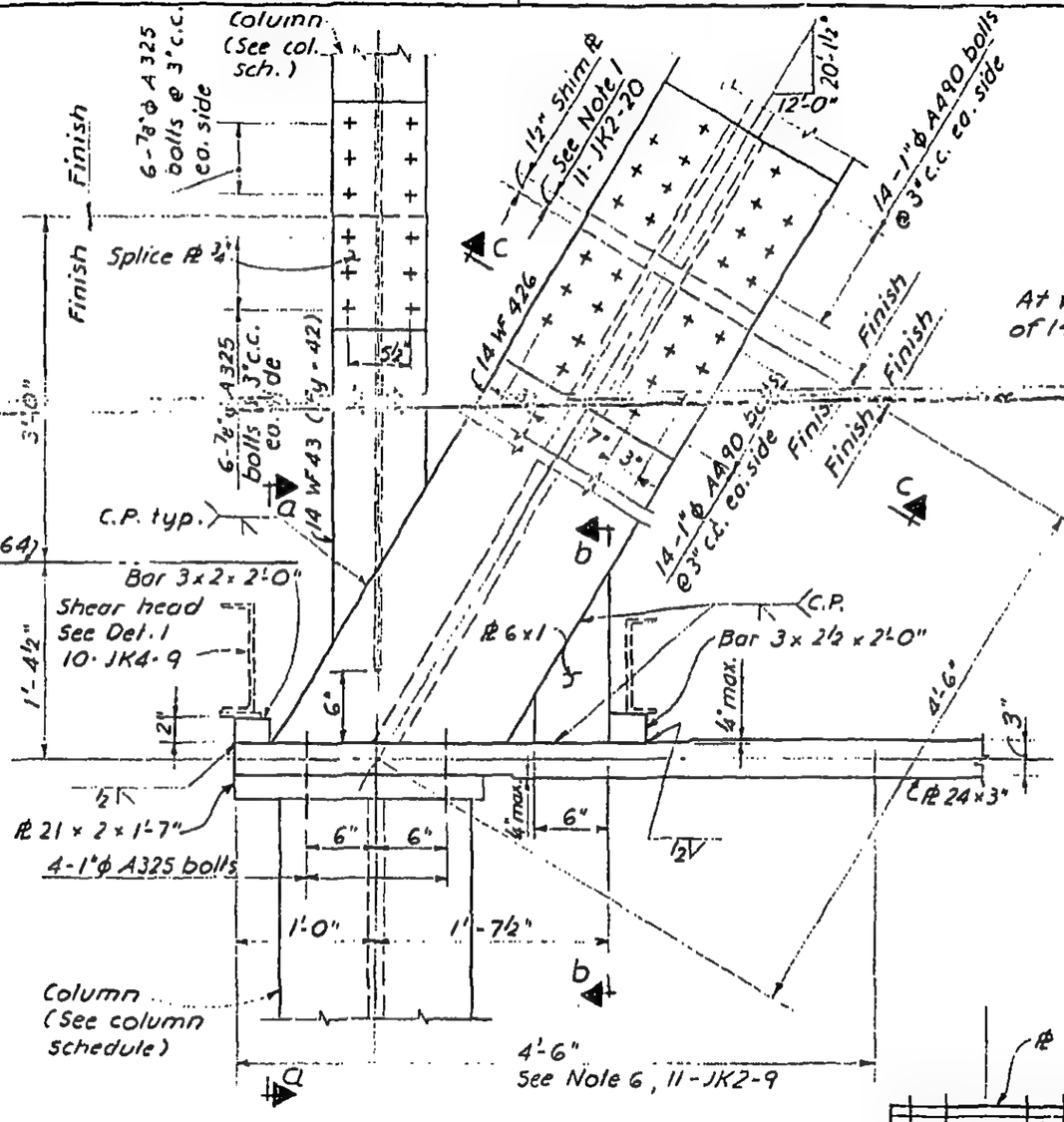
LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 84360
UNIVERSITY OF THE STATE OF NEW YORK

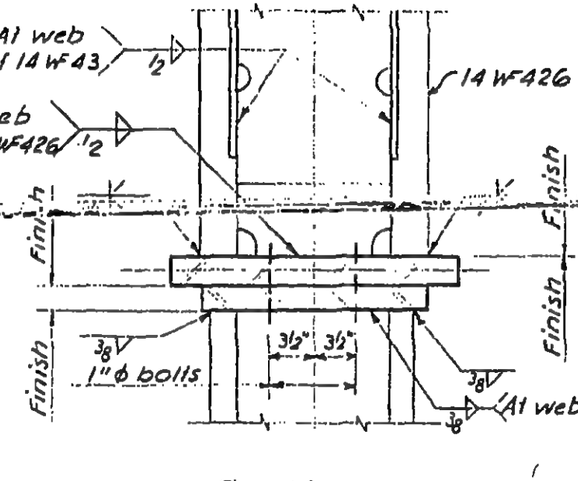
11-JK2-42

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

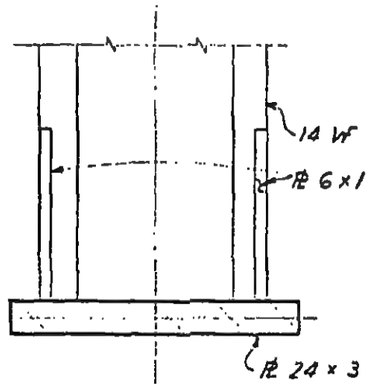
PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 32 | DATE 5-1-68

REVISIONS

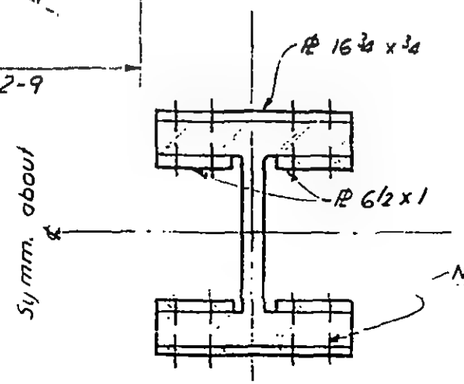




Section a-a



Section b-b



Section c-c

Note: Bolt holes in 14 WF may be 1/8" larger than nominal bolt size.

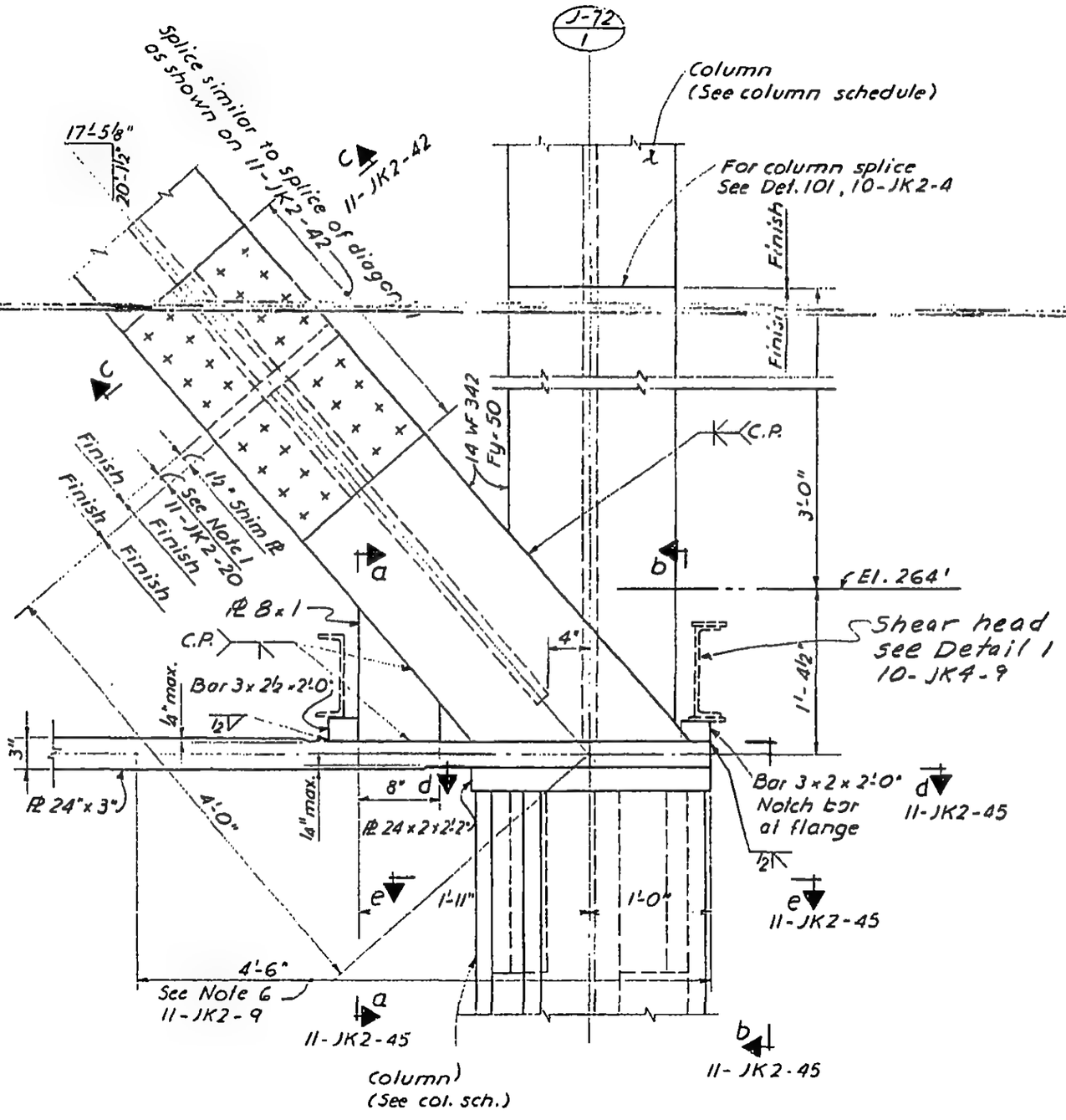
11-JK2-43

LICENSED PROFESSIONAL ENGINEER LESLIE E. ROBERTSON No. 34360 UNIVERSITY OF THE STATE OF NEW YORK

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 33 | DATE 5-1-68

REVISIONS



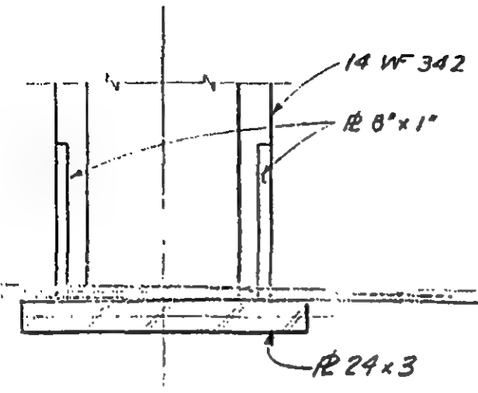
REGISTERED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
NO. 34360
STATE OF NEW YORK

11-JK2-44

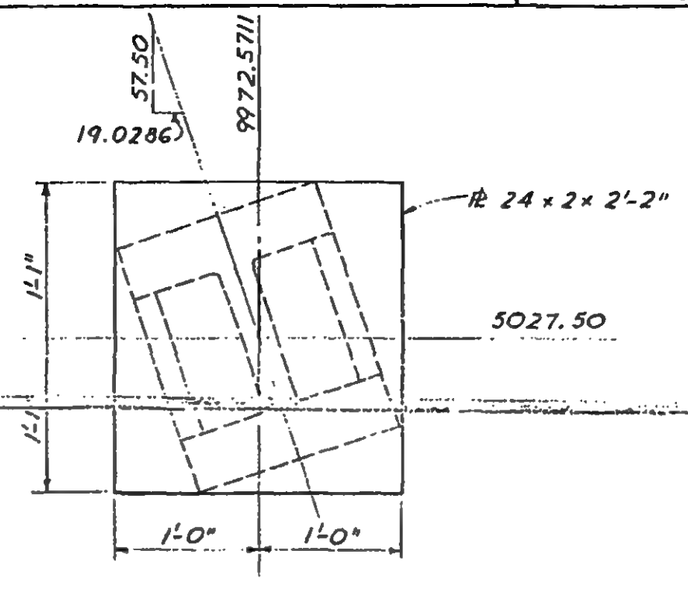
SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 33 | DATE 5-1-68

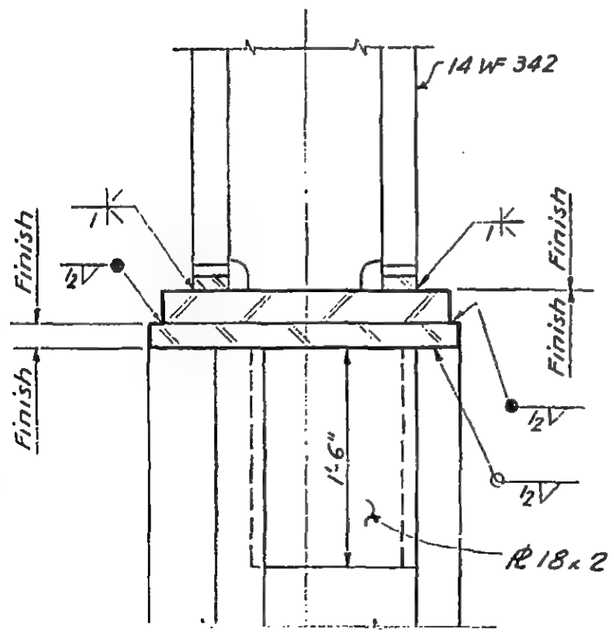
REVISIONS



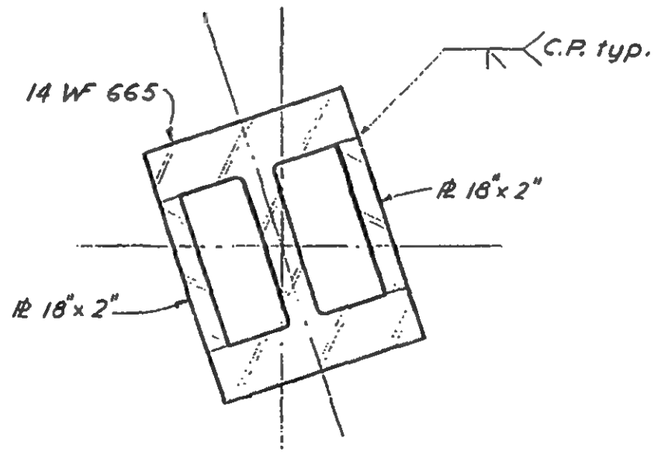
Section a-a



Section d-d



Section b-b



Section e-e

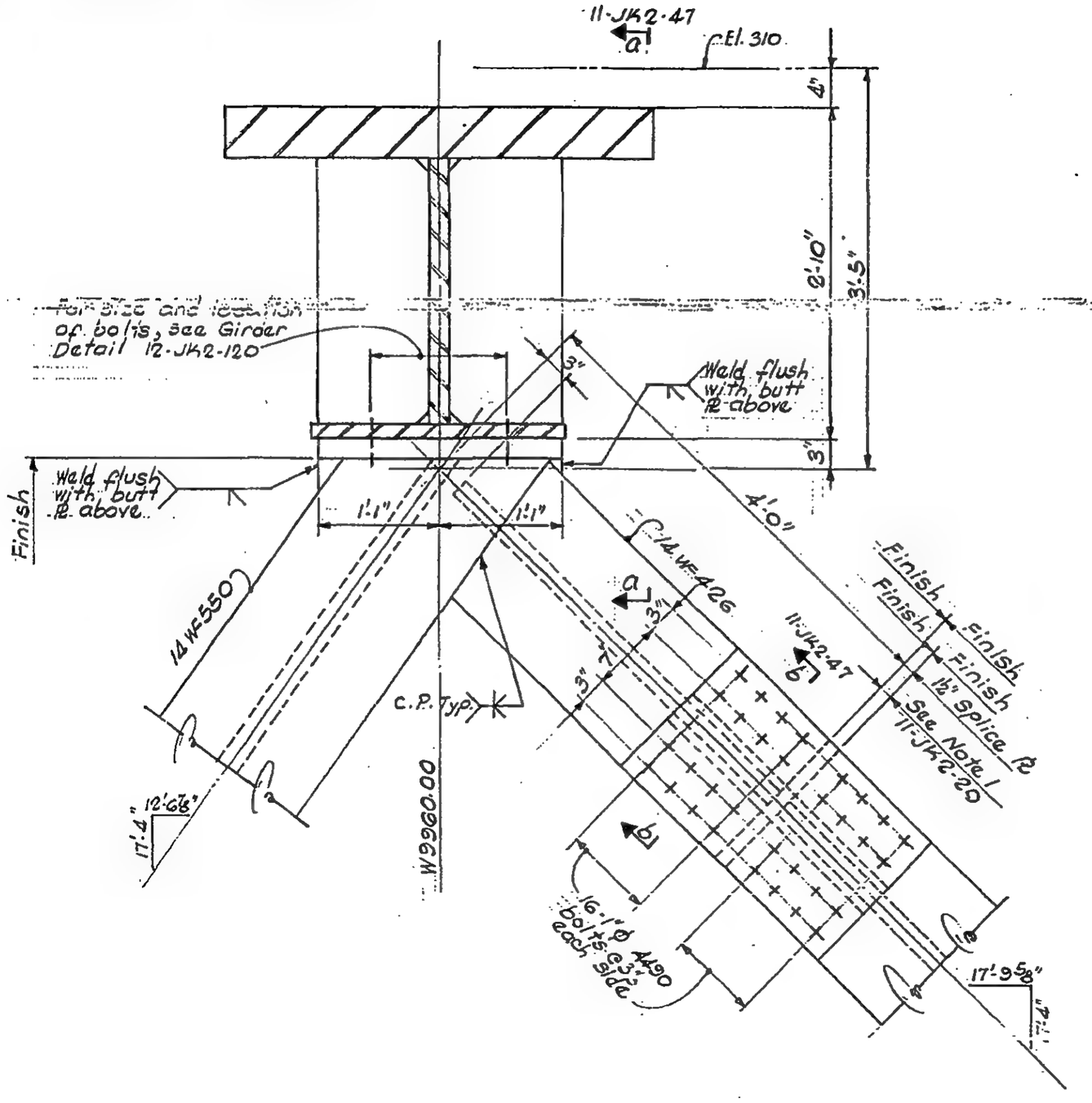
LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
UNIVERSITY OF THE STATE OF NEW YORK

11-JK2-45

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 34 | DATE 6-7-68

REVISIONS



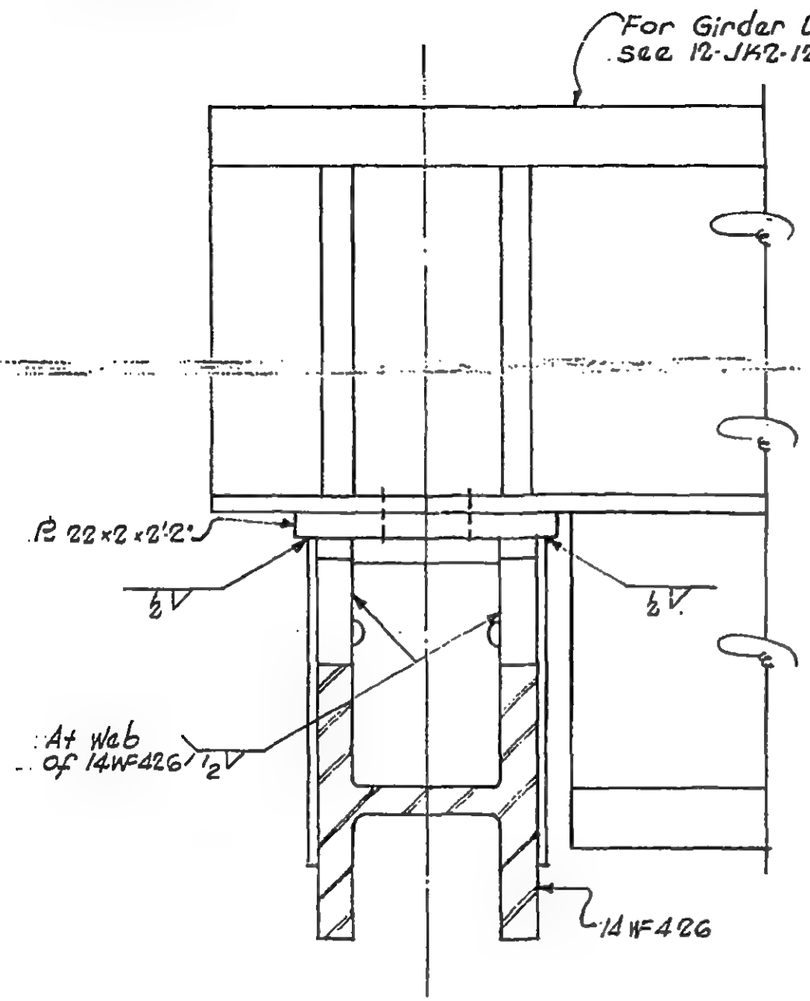
LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
UNIVERSITY OF THE STATE OF NEW YORK

11-JK2-46

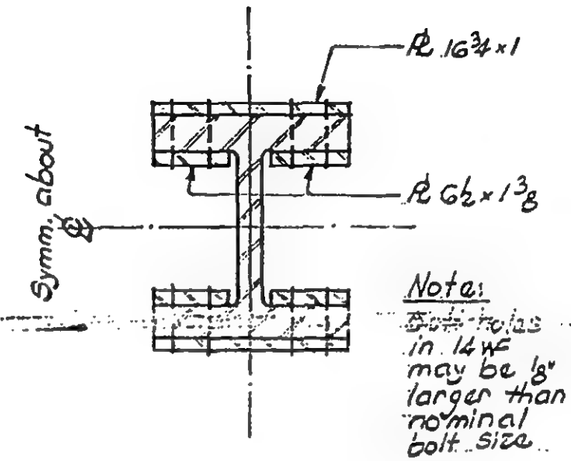
SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAILS | DATE 6-7-68

REVISIONS



Section a-a



Note:
Bolt holes in 14WF may be ⅛" larger than nominal bolt size.

Section 6-6

LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
UNIVERSITY OF THE STATE OF NEW YORK

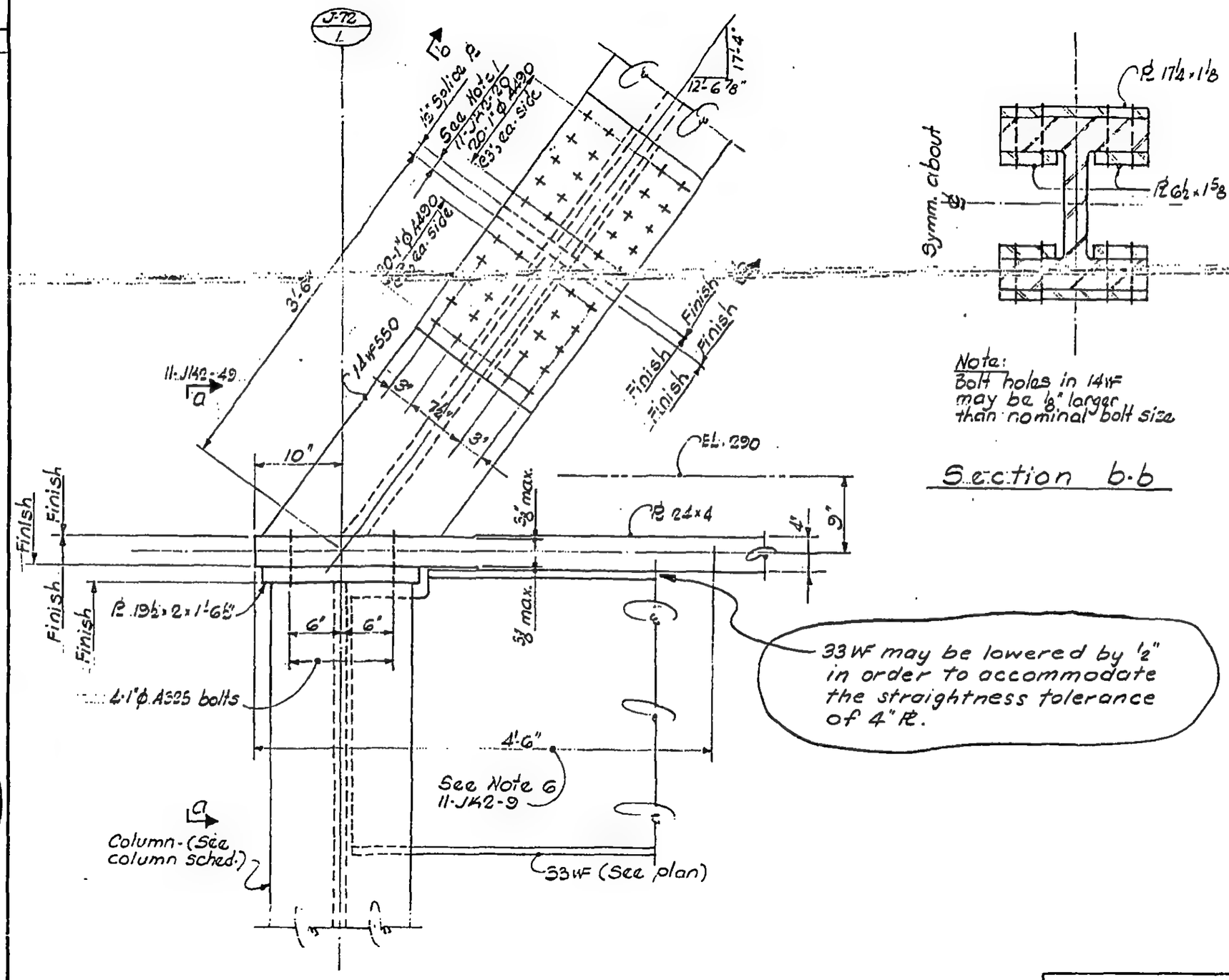
11-JK2-47

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 35 | DATE 6-7-68

REVISIONS

12-3-68



Note:
Bolt holes in 14WF may be ⅛" larger than nominal bolt size

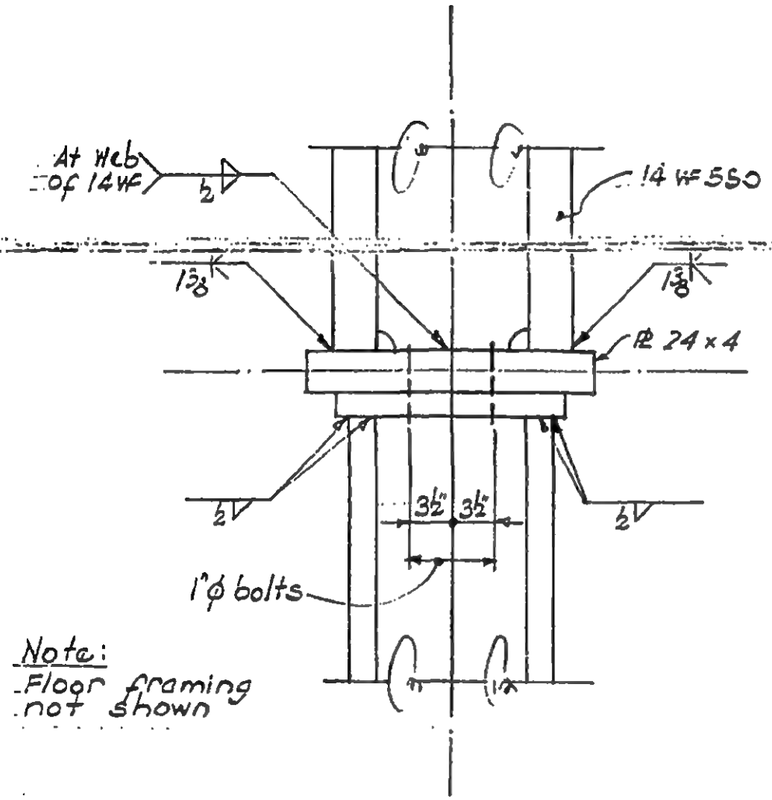
Section b-b

11-JK2-48

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

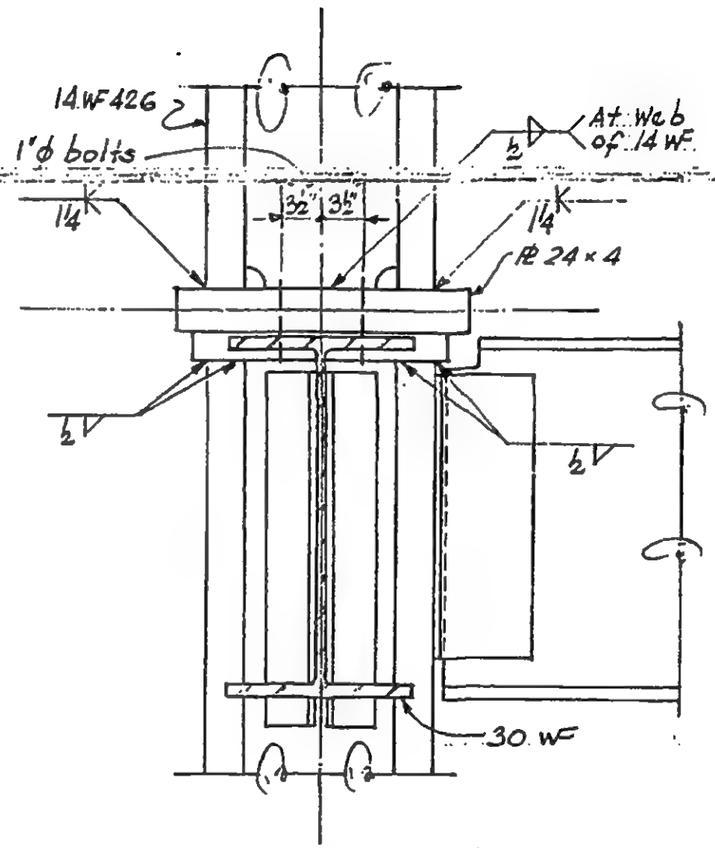
PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAILS | DATE 6-7-68

REVISIONS



Note:
Floor framing not shown

Section a-a



Section b-b

LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
THE STATE OF NEW YORK

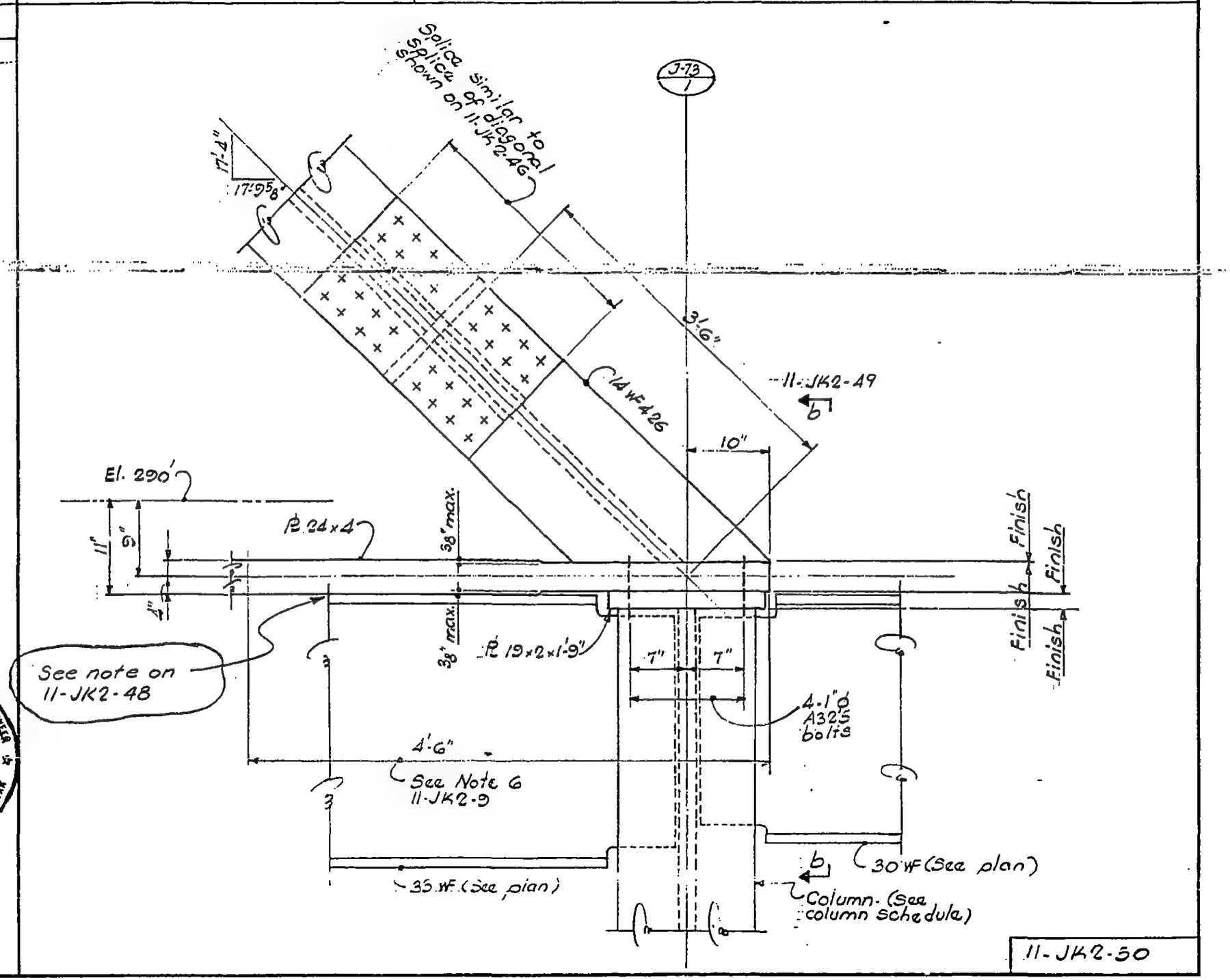
11-JK2-49

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 36 | DATE 6-7-68

REVISIONS

12-3-68



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LESLIE E. ROBERTSON
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REGISTERED IN THE STATE OF NEW YORK

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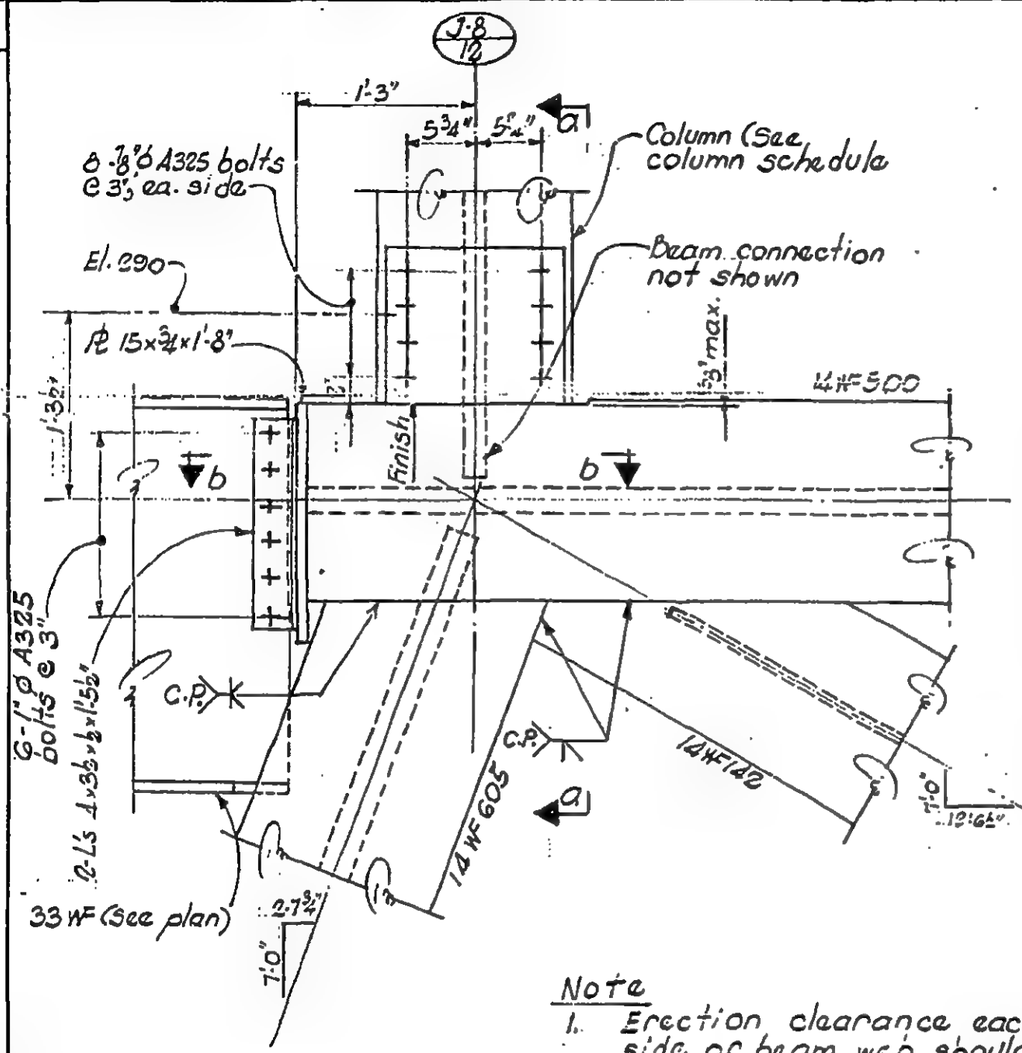
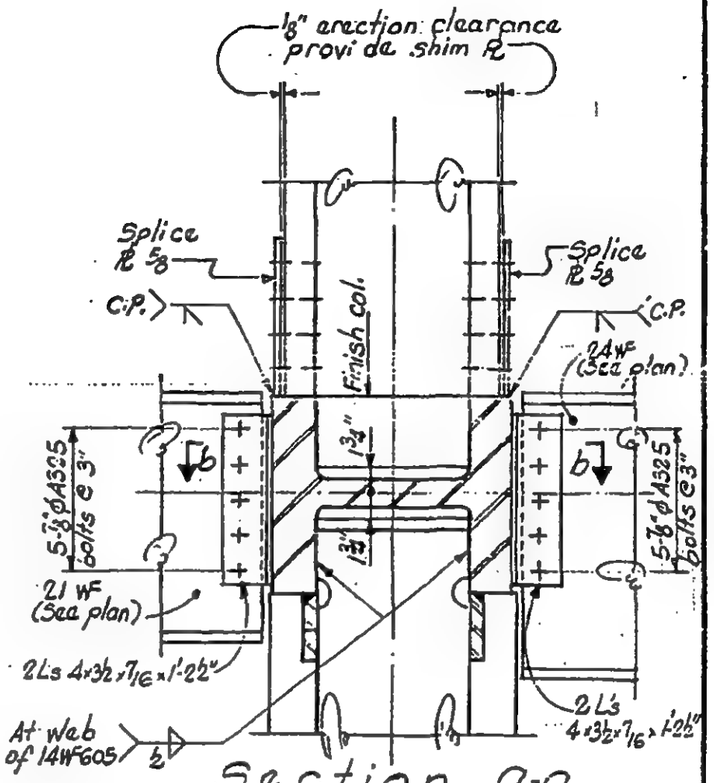
SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

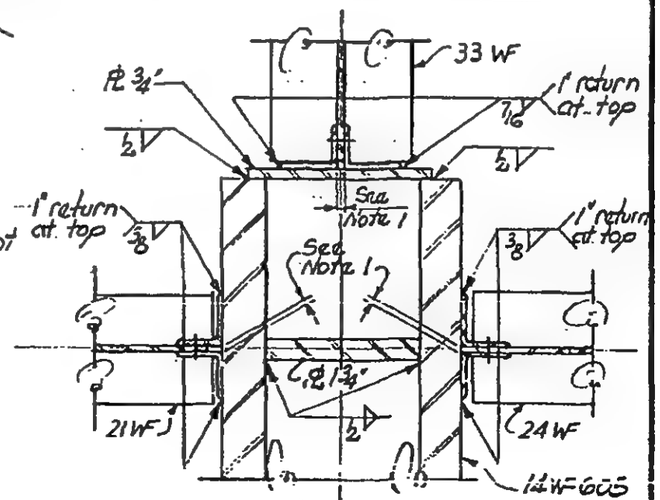
PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 37 | DATE 6-7-68

REVISIONS





Section a-a



Section b-b

Note

1. Erection clearance each side of beam web should not be more than 1/16". Provide shim between beam web and angles if required to insure surface contact for H.S. bolts.

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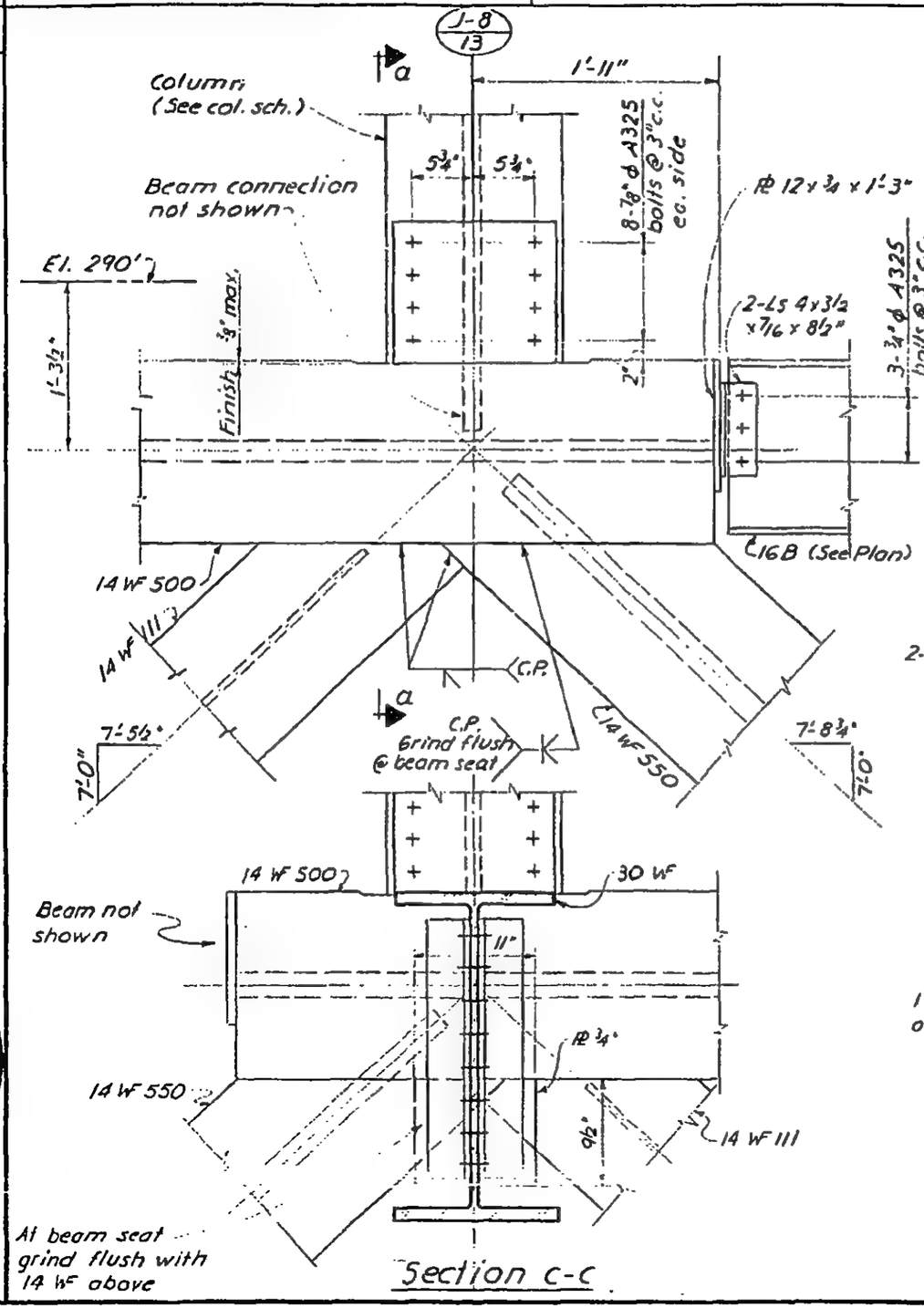
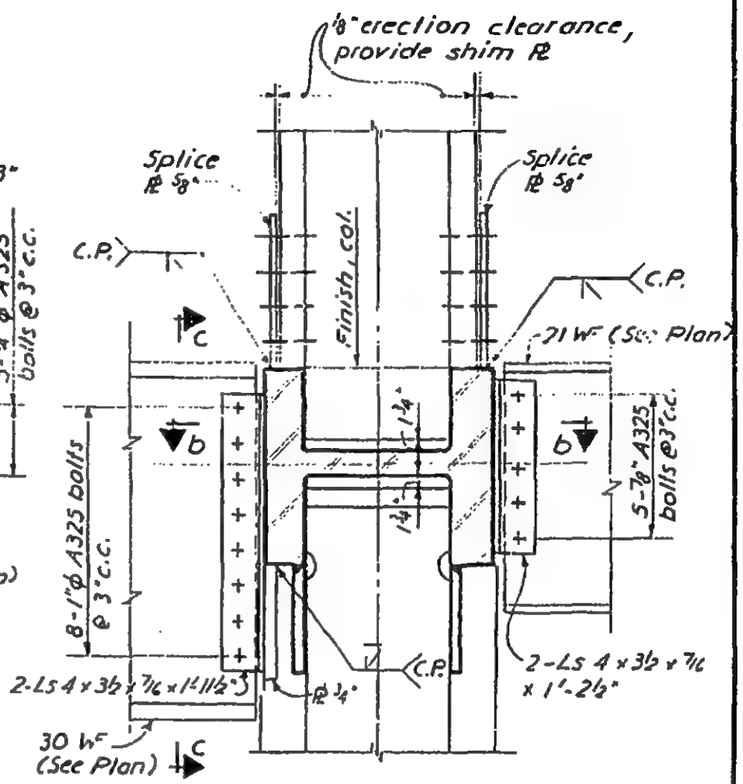
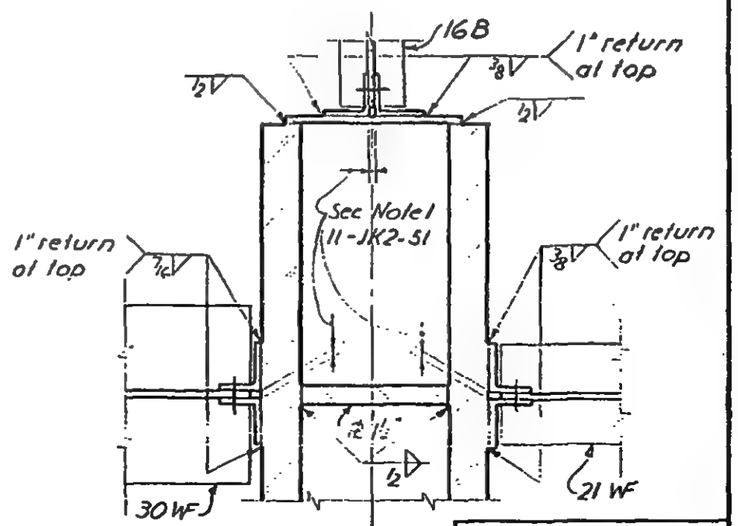
PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 38 | DATE 6-7-68

REVISIONS







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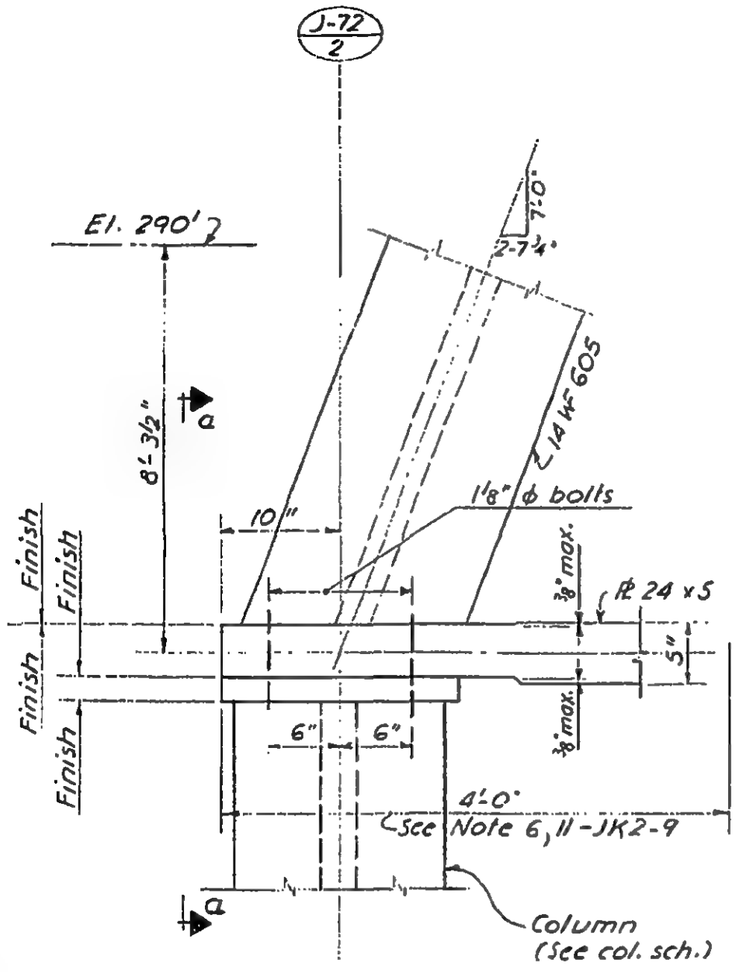
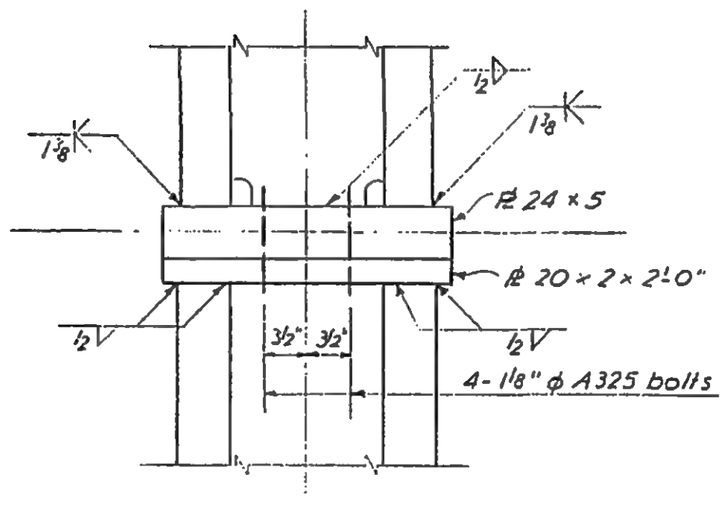
SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 39 | DATE 6-7-68

REVISIONS





Section a-a

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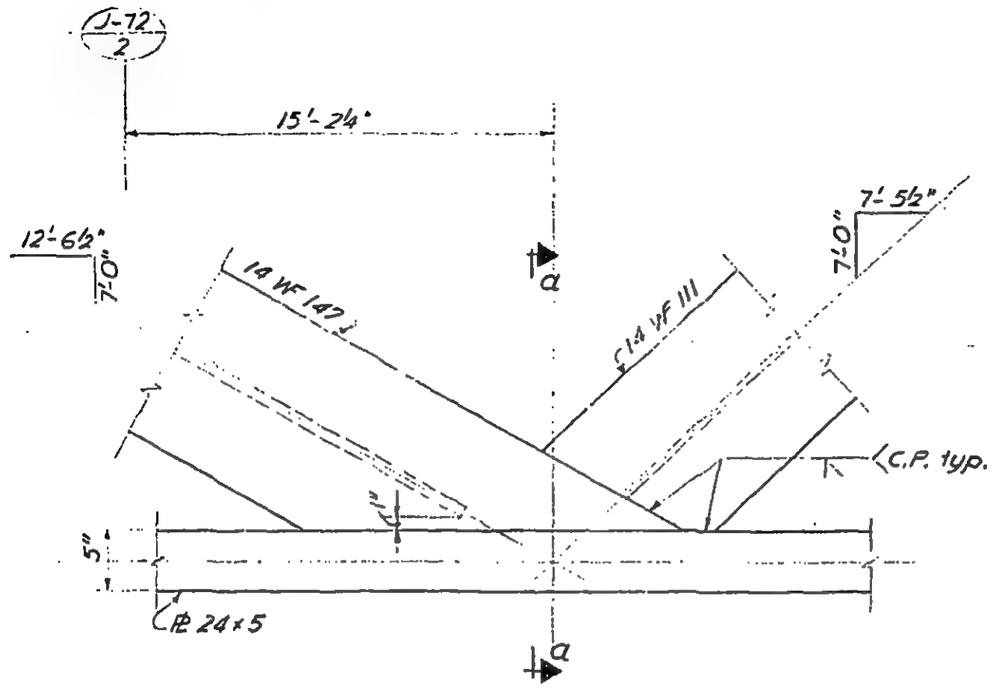
LESLIE E. ROBERTSON
No. 34360
UNIVERSITY OF THE STATE OF NEW YORK

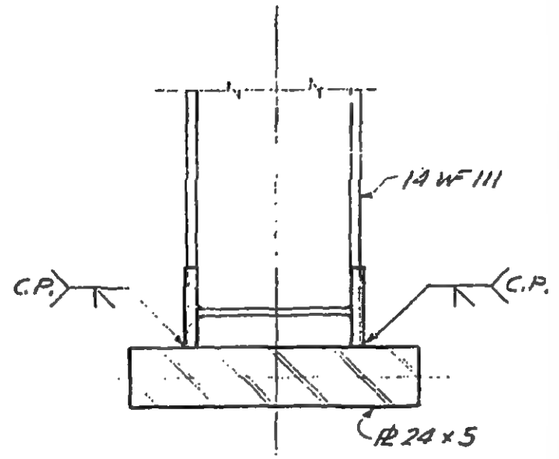
11-JK2-53

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 40 | DATE 6-7-68

REVISIONS





Section a-a

LICENSED PROFESSIONAL ENGINEER
LESLIE E. ROBERTSON
No. 34360
OF THE STATE OF NEW YORK

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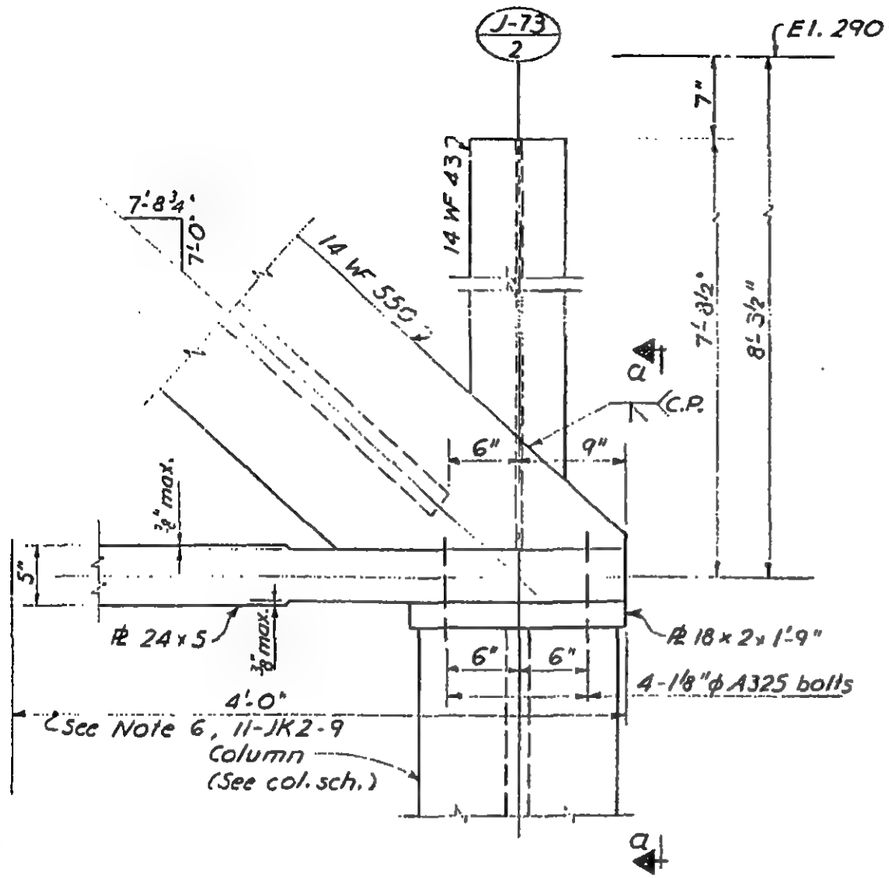
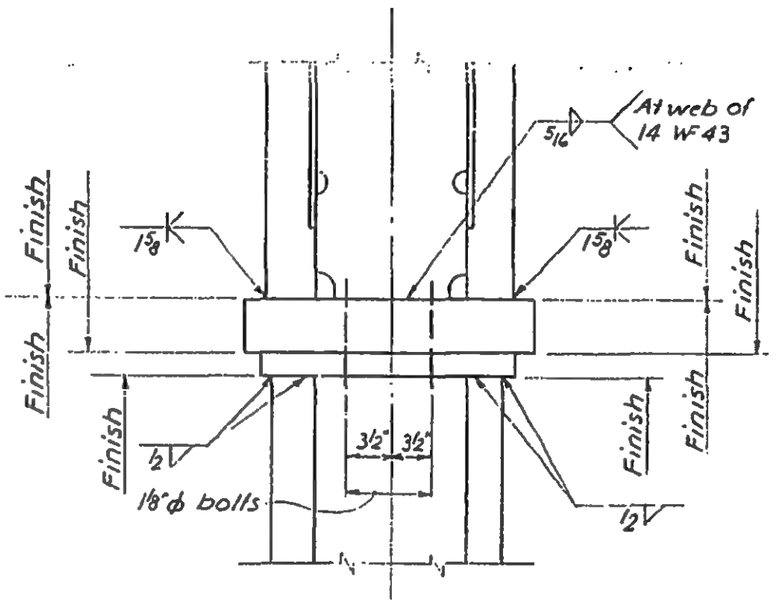
SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 41 | DATE 6-7-68

REVISIONS





Section a-a

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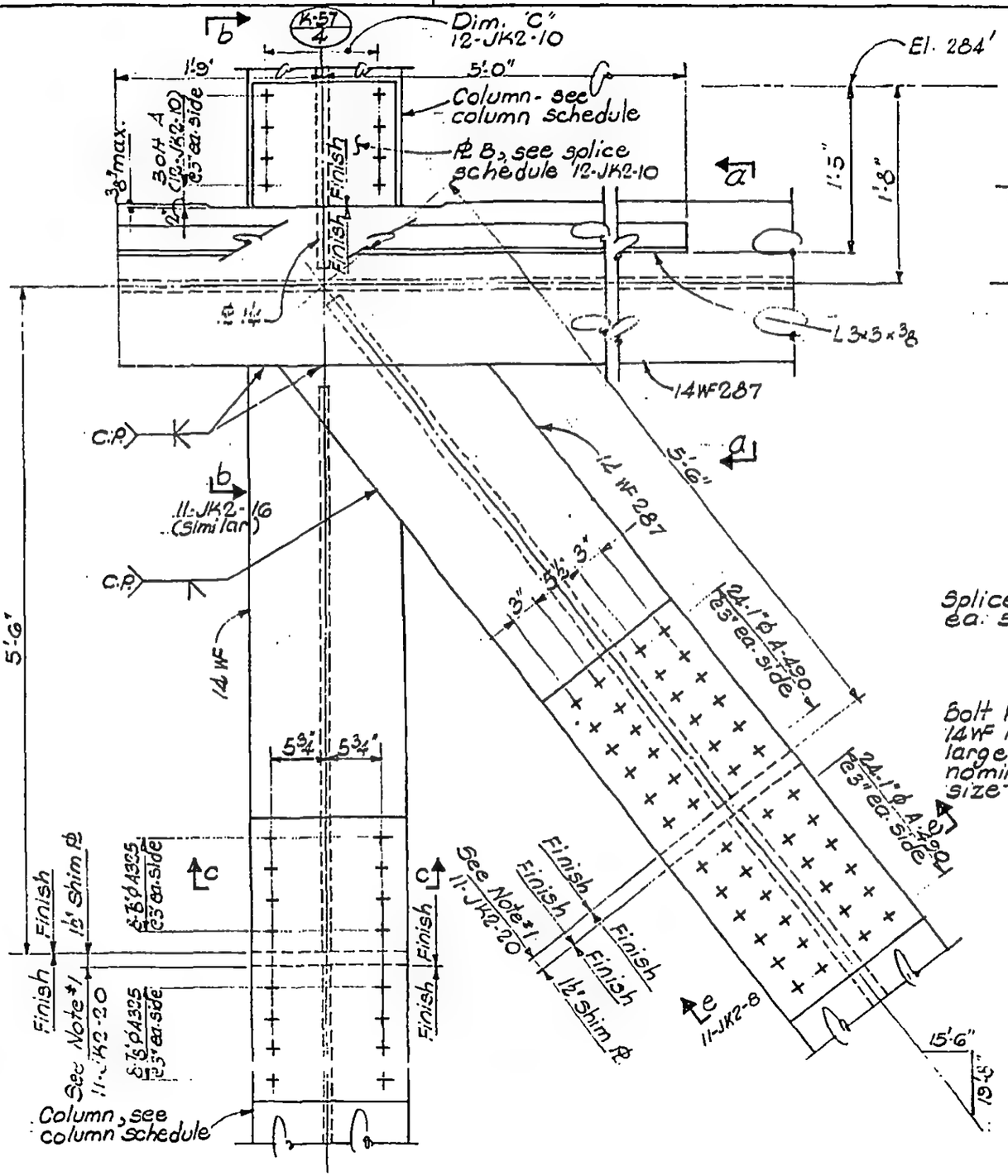
LESLIE E. ROBERTSON
No. 34360
UNIVERSITY OF THE STATE OF NEW YORK

11-JK2-55

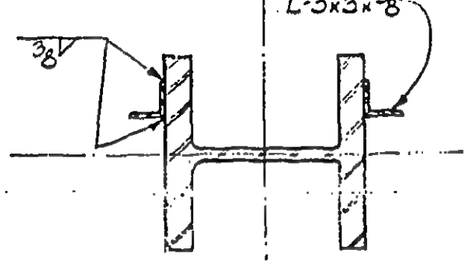
SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 42 | DATE 9.4.68

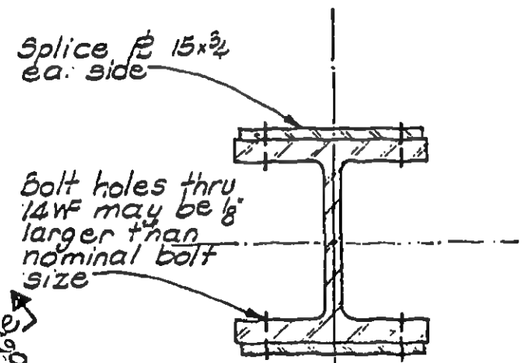
REVISIONS



Symm. about ℄



Section a-a



Section c-c

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No. 34360
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DESIGNED

DRAWN

REVIEWED

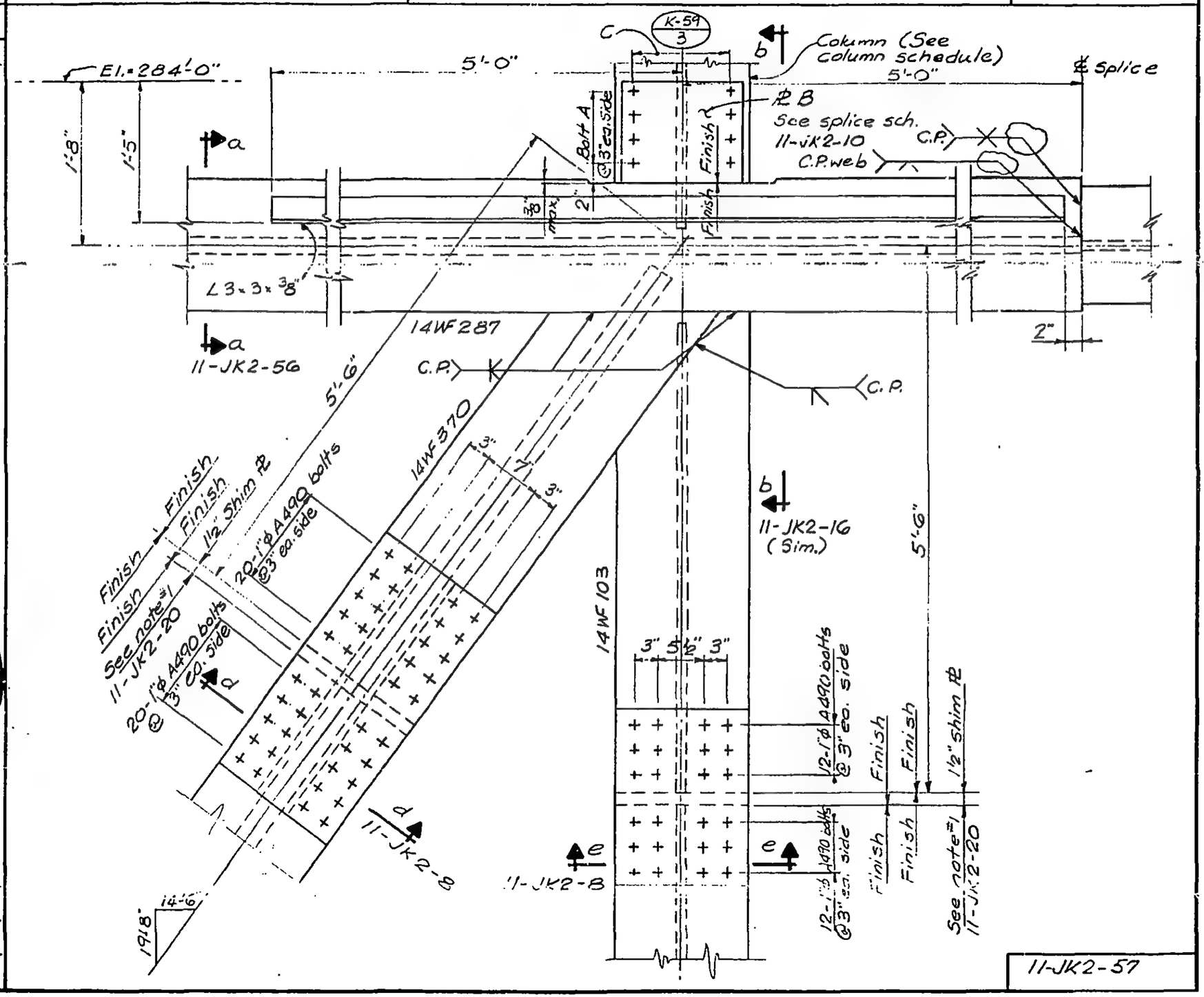
11-JK2-56

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 43 | DATE 9-4-68

REVISIONS

10-15-68



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No. 34360
UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED

DRAWN

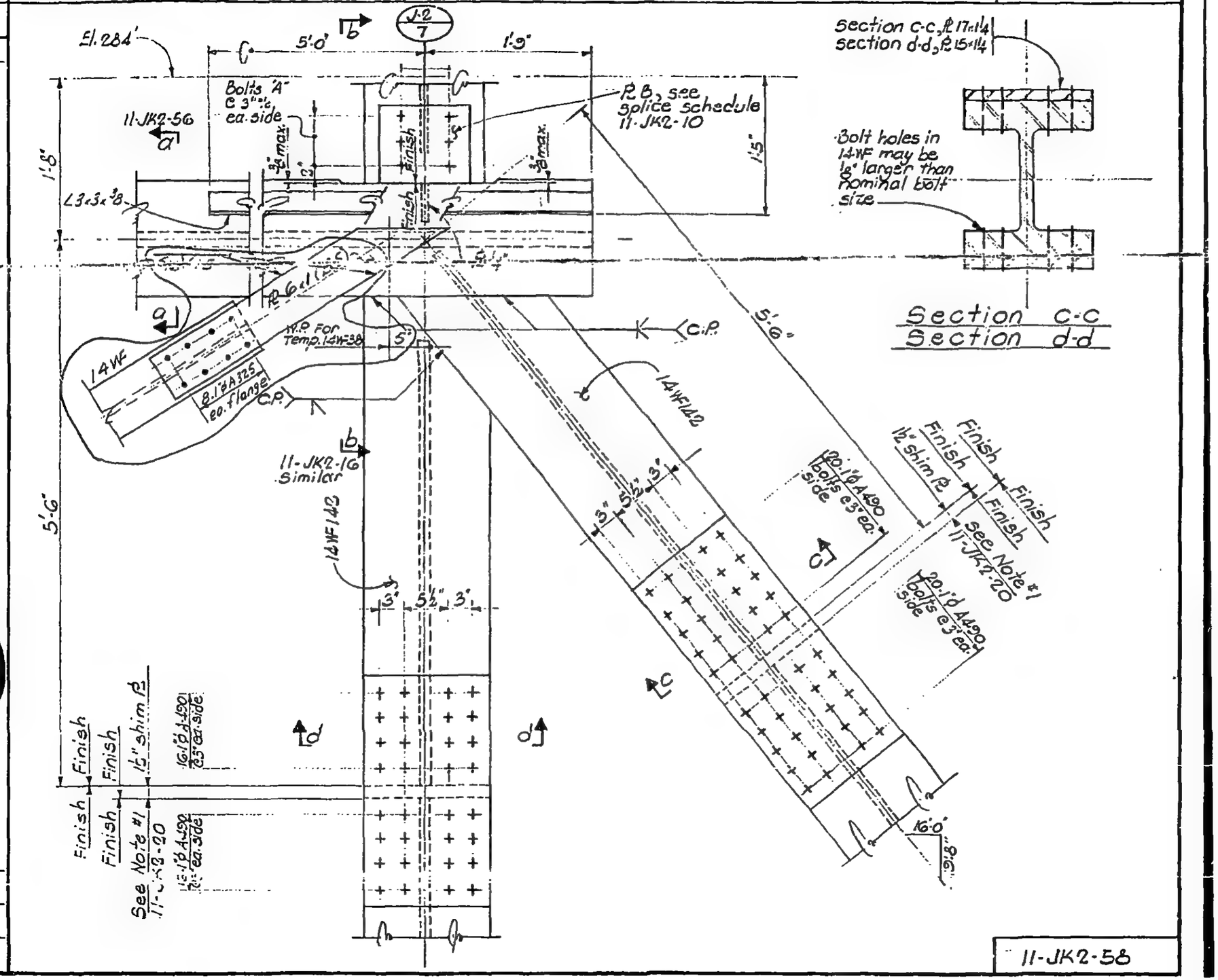
REVIEWED

11-JK2-57

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT: THE WORLD TRADE CENTER | TITLE: TRUSS DETAIL 44 | DATE: 9-4-68

REVISIONS
3-21-69



LICENSED PROFESSIONAL ENGINEER
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No. 34360
UNIVERSITY OF THE STATE OF NEW YORK

DESIGNED
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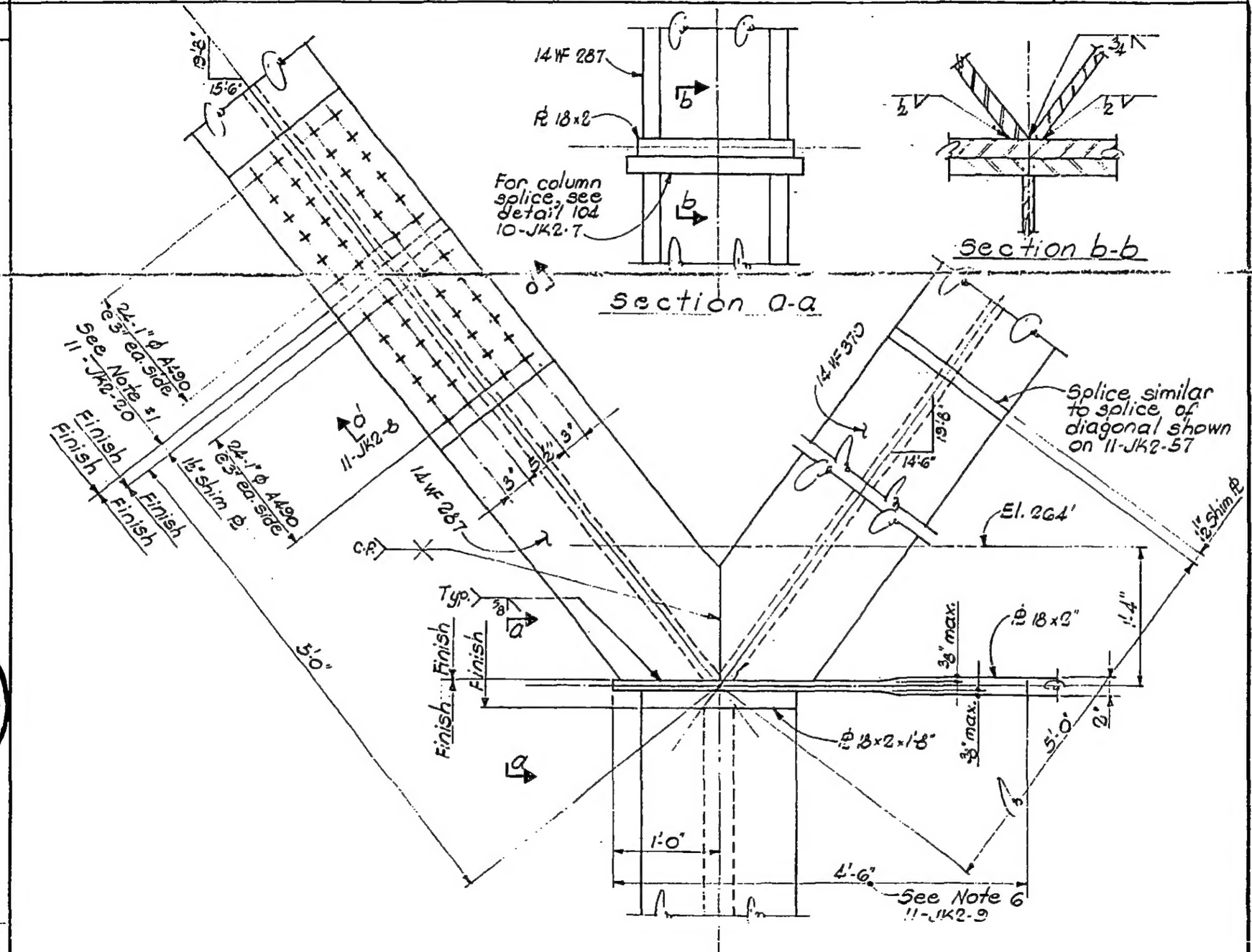
REVIEWED E.L.

11-JK2-58

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 45 | DATE 9-4-68

REVISIONS



LICENSED PROFESSIONAL ENGINEER — LESLIE E. ROBERTSON — No. 34360 — UNIVERSITY OF … OF NEW YORK

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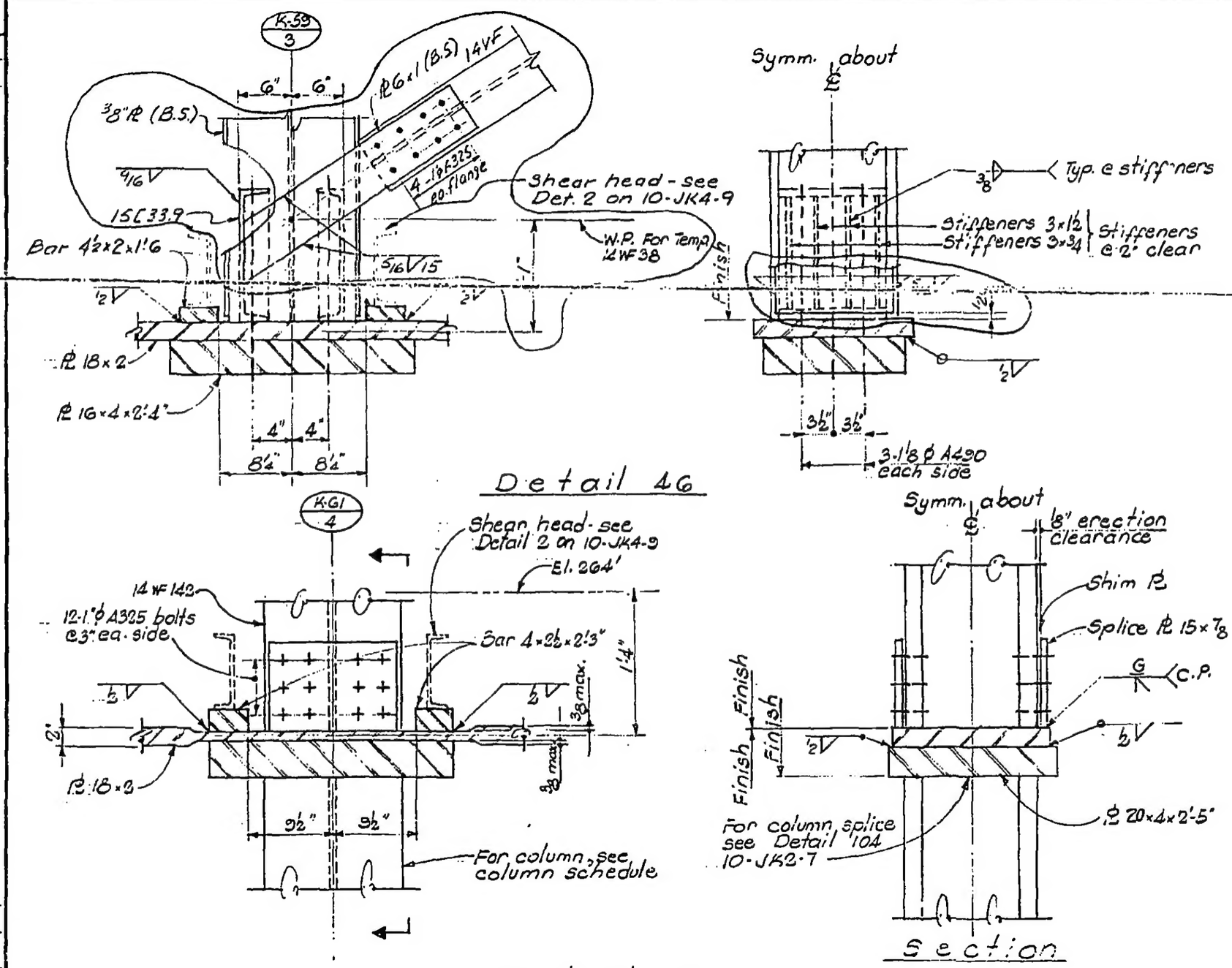
11-JK2-59

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 46 & 47 | DATE 9-4-68

REVISIONS
1-8-69
3-21-69



LICENSED PROFESSIONAL ENGINEER — LESLIE E. ROBERTSON — NEW YORK

12-24-68
DESIGNED

DRAWN S.C.

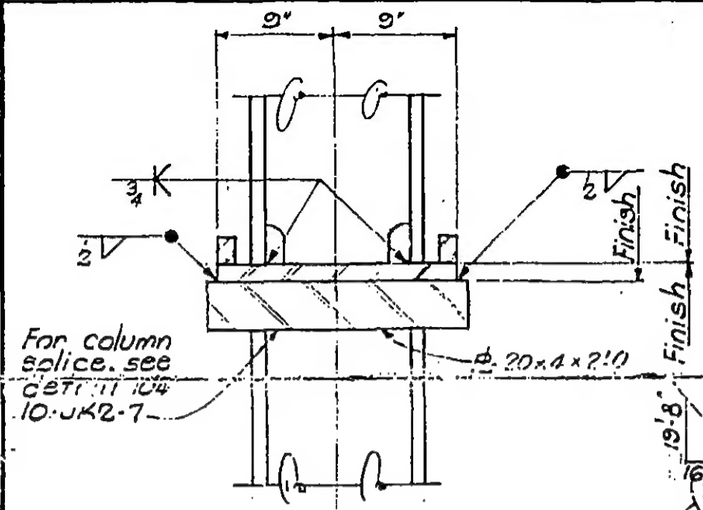
REVIEWED E.L.

11-JK2-60

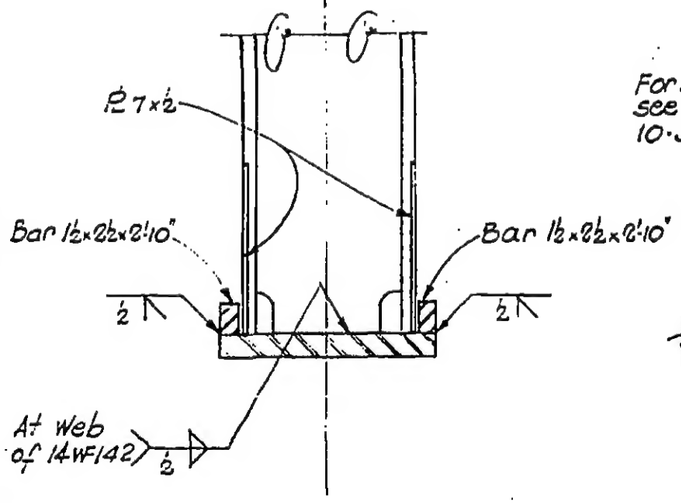
SKILLING, HELLE, CHRISTIANSEN, ROBERTSON — Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER | TITLE TRUSS DETAIL 48 | DATE 9-4-68

REVISIONS



Section a-a



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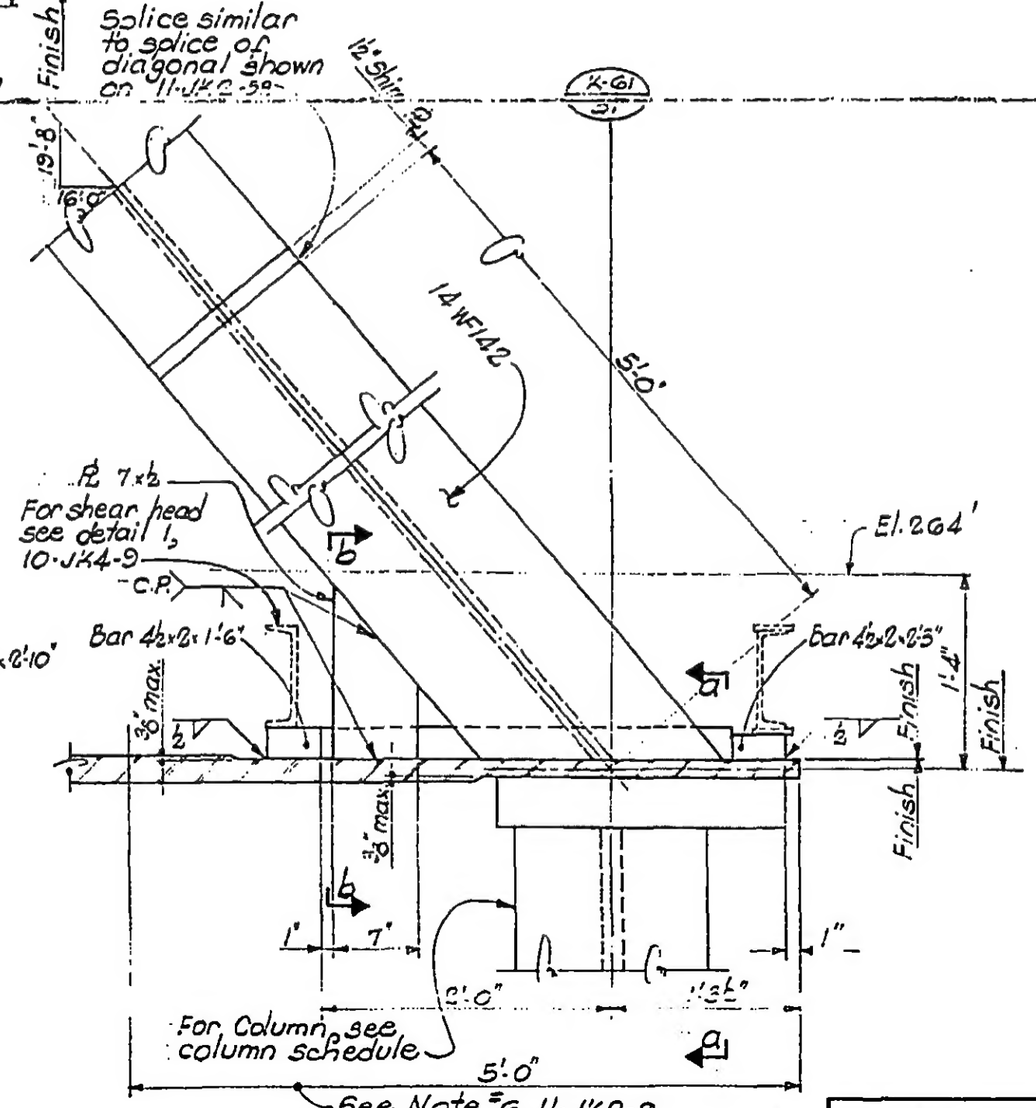

11-JK2-61

DESIGNED

DRAWN

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